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REFMLVCGD.ENV
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             AGCTCTATAA AAGAGCTCAC AACCCCTCAC
             GCGCCAGTCC TCCGATAGAC TGAGTCGCCC GGGTACCCGT GTATCCAATA AATCCTCTTG   60
             CTGTTGCATC CGACTCGTGG TCTCGCTGTT CCTTGGGAGG GTCTCCTCAG AGTGATTGAC  120
             TACCCGTCTC GGGGGTCTTT CATTTGGGGG CTCGTCCGGG ATCTGGAGAC CCCTGCCCAG  180
             GGACCACCGA CCCACCACCG GGAGGTAAGC TGGCCAGCAA TTGTTCTGTG TCTGTCCATT  240
             GTCCTGTGTC TTTGATTGAT TTTATGCGCC TGTGTCTGTA CTAGTTGGCC GACTAGATTG  300
```

FIGURE 1a

BamHI → PR75 GCSA

GTATCTGGCG GATCCGTGGT GGAACTGACG AGTTCGAGAC ACCCGGCCGC AACCCTGGGA 360
GACGTCCCAG GGACTTCGGG GGCCATTTTT GTGGCCCGGC CAGAGTCCAA CCATCCCGAT 420
CGTTTTGGAC TCTTTGGTGC ACCCCCCTTA GAGGAGGGGT ATGTGGTTCT GGTAGGAGAC 480
AGAGGGCTAA AACGGTTTCC GCCCCCGTCT GAGTTTTTGC TTTCGGTTTG GAACCGAAGC 540
CGCGCCGCGC GTCTTGTCTG CTGCAGCATC GTTCTGTGTT GTCTCTGTTT GACTGTTTTT 600
CTGTATTTGT CTGAAAACAT GGGCCAGGCT GTTACCACCC CCTTAAGTTT GACTTTAGAC 660
CACTGGAAGG ATGTCGAACG GACAGCCCAC AACCTGTCGG TAGAGGTTAG AAAAAGGCGC 720
TGGGTTACAT TCTGCTCTGC AGAATGGCCA ACCTTCAACG TCGGATGGCC ACGAGACGGC 780
ACTTTTAACC CAGACATTAT TACACAGGTT AAGATCAAGG TCTTCTCACC TGGCCCACAT 840
GGACATCCGG ATCAGGTCCC CTACATCGTG ACCTGGGAAG CTATAGCAGT AGACCCCCCT 900
CCCTGGGTCA GACCCTTCGT GCACCCTAAA CCTCCCCTCT CTCTTCCCCC TTCAGCCCCC 960
TCTCTCCCAC CTGAACCCCC ACTCTCGACC CCGCCCCAGT CCTCCCTCTA TCCGGCTCTC 1020
ACTTCTCCTT TAAACACCAA ACCTAGGCCT CAAGTCCTTC CTGATAGCGG AGGACCACTC 1080

PstI; → gag; >REFMLV.CGII.GAG; HAp15; HAp15 ↔ pp12; StuI

FIGURE 1b

```
ATTGATCTAC TCACGGAGGA CCCTCCGCCT TACCGGGACC CAGGGCCACC CTCTCCTGAC 1140
GGGAACGGCG ATAGCGGAGA AGTGGCCCCT ACAGAAGGAG CCCCTGACCC TTCCCCAATG 1200
GTATCCCGCC TGCGGGGAAG AAAAGAACCC CCCGTGGCGG ATTCTACTAC CTCTCAGGCG 1260
TTCCCCCTTC GCCTGGGAGG GAATGGACAG TATCAATACT GGCCATTTTC CTCCTCTGAC 1320
CTCTATAACT GGAAAAATAA CAACCCCTCT TTCTCCGAGG ACCCAGCTAA ATTGACAGCT 1380
TTGATCGAGT CCGTTCTCCT TACTCATCAG CCCACTTGGG ATGACTGCCA ACAGCTATTA 1440
GGGACCCTGC TGACGGGAGA AGAAAAACAG CGAGTGCTCC TAGAGGCCCG AAAGGCGGTT 1500
CGAGGGGAGG ACGGACGCCC AACTCAG GGGGATCCTCTAGAGTCGACCTGCAGGCATGCAAGCT

CAGATCCAAT TCGATTAG TTCAATTTGT TAAAGACAGG ATCTCAGTAG 7740
TCCAGGCTTT AGTCCTGACT CAACAATACC ACCAGCTAAA ACCACTAGAA TACGAGCCAC 7800
AATAAATAAA AGATTTTATT TAGTTTCCAG AAAAAGGGGG GAATGAAAGA CCCCACCAAA 7860
REFMLVCGD.ENV<
```

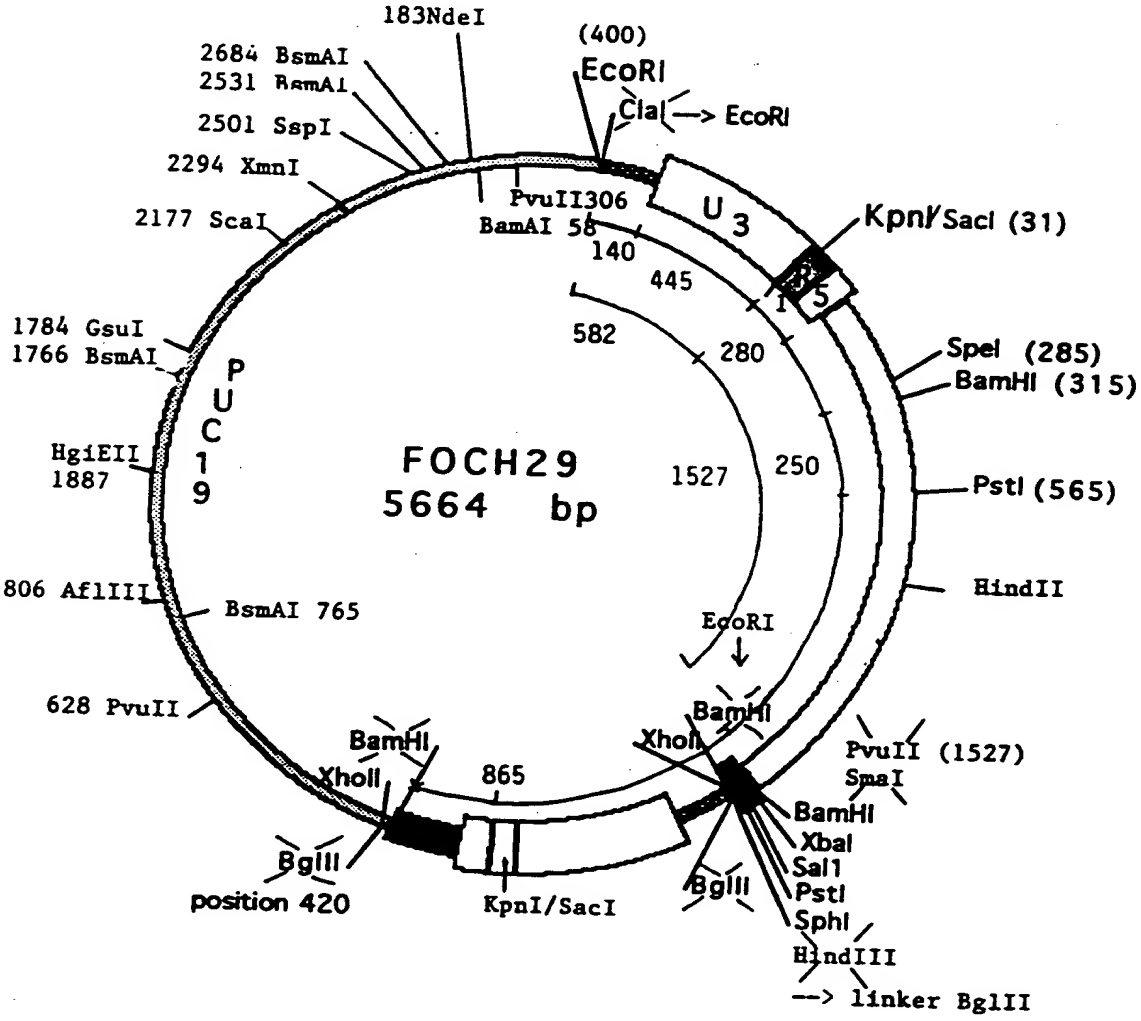
Annotations: p12 ← CAp30; début FMS15 1447.1468; Cla I; BamH I; Xba I; Sal I; Hinc II; Acc I; Pst I; Sph I; Hind III; Cla; env. ←; start U3 LR

FIGURE 1c

TTGCTTAGCC TGATAGCCGC AGTAACGCCA TTTTGCAAGG CATGGAAAAA TACCAAACCA 7920
LTR 81
AGAATAGAGA AGTTCAGATC AAGGGCGGGT ACACGAAAAC AGCTAACGTT GGGCCAAACA 7980
GGATATCTGC GGTGAGCAGT TTCGGCCCCG GCCCGGGGCC AAGAACAGAT GGTCACCGCG 8040
LTR + 281
GTTCGGCCCC GGCCCGGGGC CAAGAACAGA TGGTCCCCAG ATATGGCCCA ACCCTCAGCA 8100
GTTTCTTAAG ACCCATCAGA TGTTTCCAGG CTCCCCCAAG GACCTGAAAT GACCCTGTGC 8160
CTTATTTGAA TTAACCAATC AGCCTGCTTC TCGCTTCTGT TCGCGCGCTT CTGCTTCCCG 8220
U3
AGCTCTATAA AAGAGCTCAC AACCCCTCAC tcg

R
KpnI
GCGCCAGTCC TCCGATAGAC TGAGTCGCCC GGGTACCCGT GTATCCAATA AATCCTCTTG 60
U5 SmaI
CTGTTGCATC CGACTCGTGG TCTCGCTGTT CCTTGGGAGG GTCTCCTCAG AGTGATTGAC 120
IR PBS
TACCCGTCTC GGGGGTCTTT CATTTGGGGG CTCGTCCGGG ATCTGGAGAC CCCTGCCCAG 180
SD
GGACCACCGA CCCACCACCG GGAGGTAAGC TGGCCAGCAA TTGTTCTGTG TCTGTCCATT 240
SpeI
GTCCTGTGTC TTTGATTGAT TTTATGCGCC TGTGTCTGTA CTAGTTGGCC GACTAGATTG 300
BamHI
GTATCTGGCG GATC T pUC19

FIGURE 1d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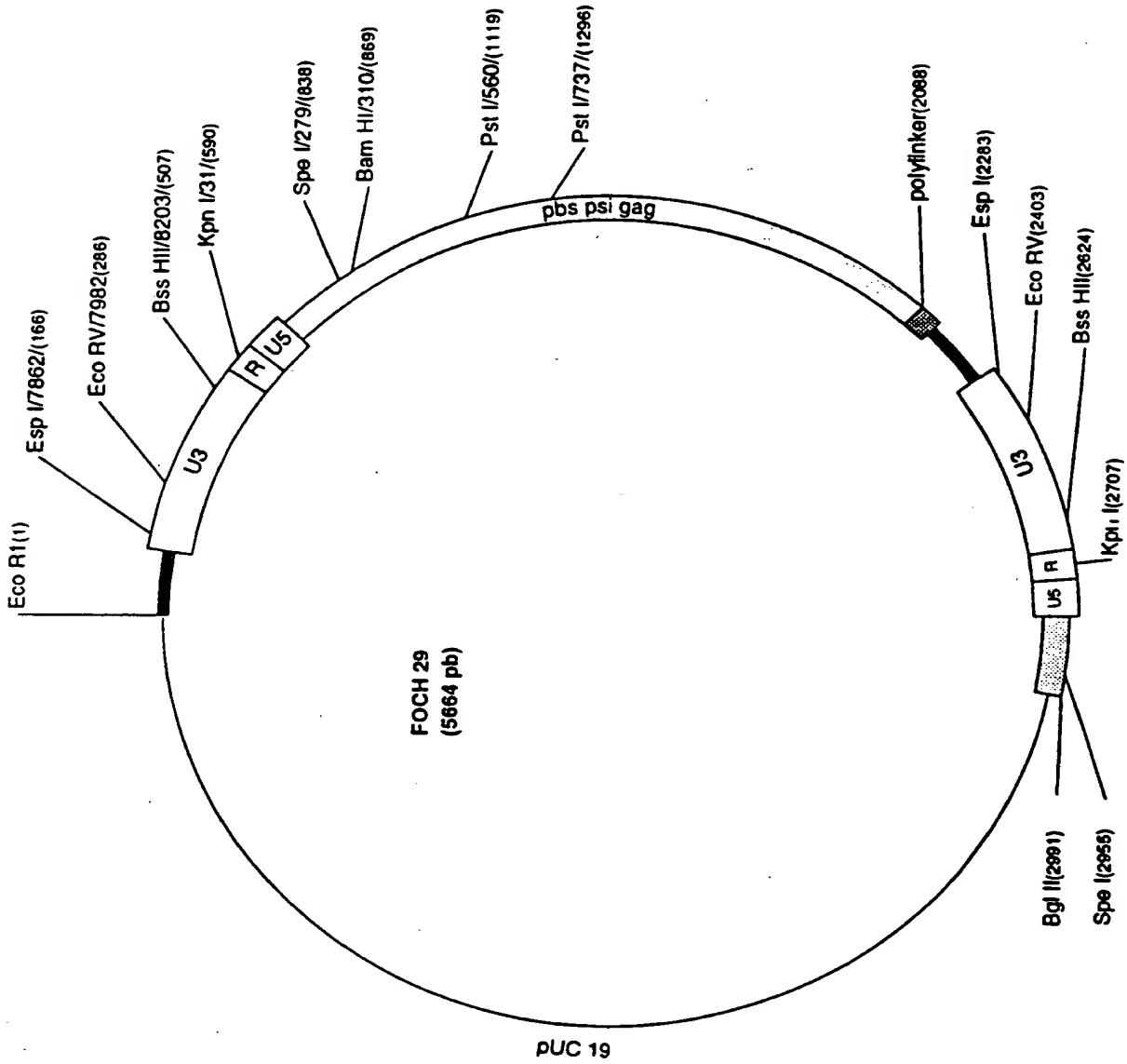
(400)
EcoRI
ClaI --> EcoRI
2684 BsmAI
2531 BsmAI
2501 SspI
2294 XmnI
2177 ScaI
PvuII306
BamAI 58
140
445
582
280
1
U 3
R
U 5
KpnI/SacI (31)
SpeI (285)
BamHI (315)
PstI (565)
HindII
EcoRI
BamHI
XhoII
PvuII (1527)
SmaI
BamHI
XbaI
SalI
PstI
SphI
HindIII
--> linker BglII
BglII
KpnI/SacI
865
BamHI
XhoII
BglII
position 420
628 PvuII
806 AflIII
BsmAI 765
1784 GsuI
1766 BsmAI
HgiEII
1887
P
U
C
1
9
FOCH29
5664 bp
1527
250

FIGURE 2 A



polylinker
Bam HI : 2088
Xba I : 2094
Sal I : 2100
Pst I : 2106
Sph I : 2112

FIGURE 2B

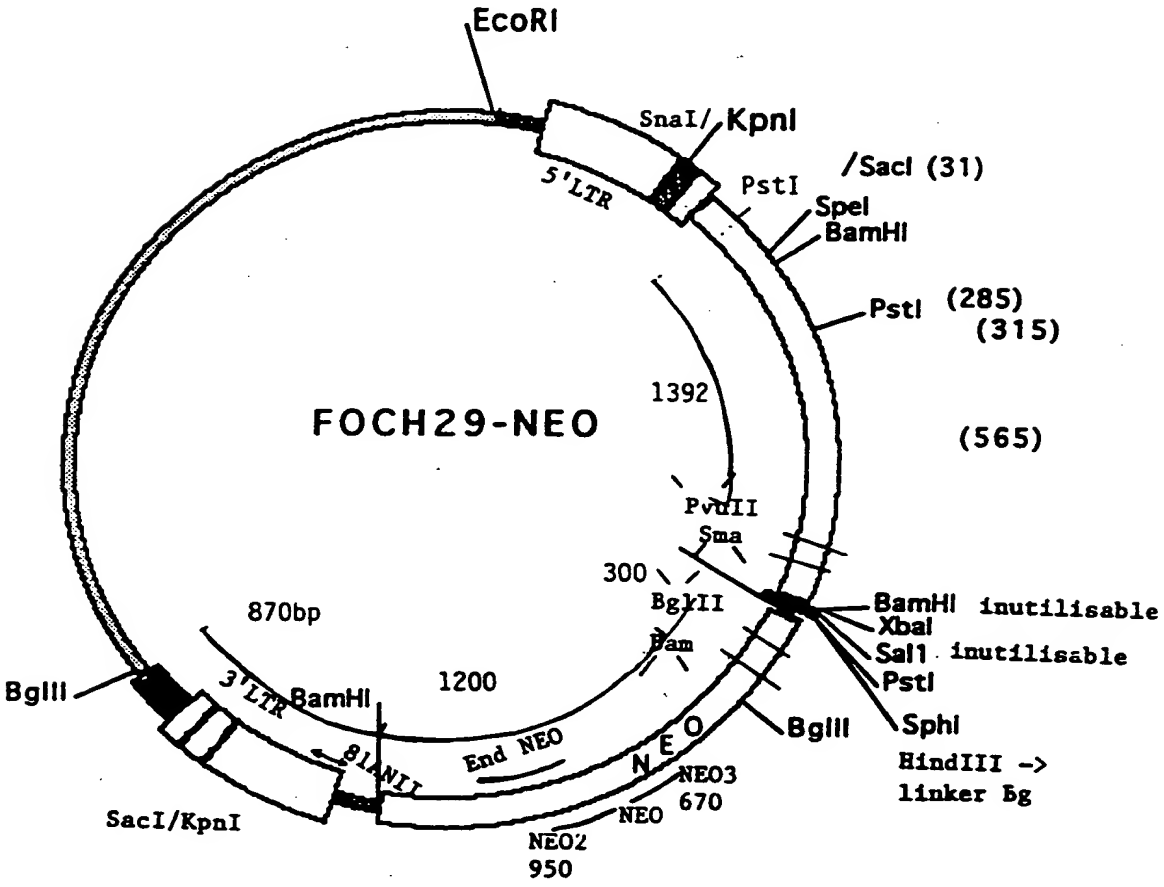
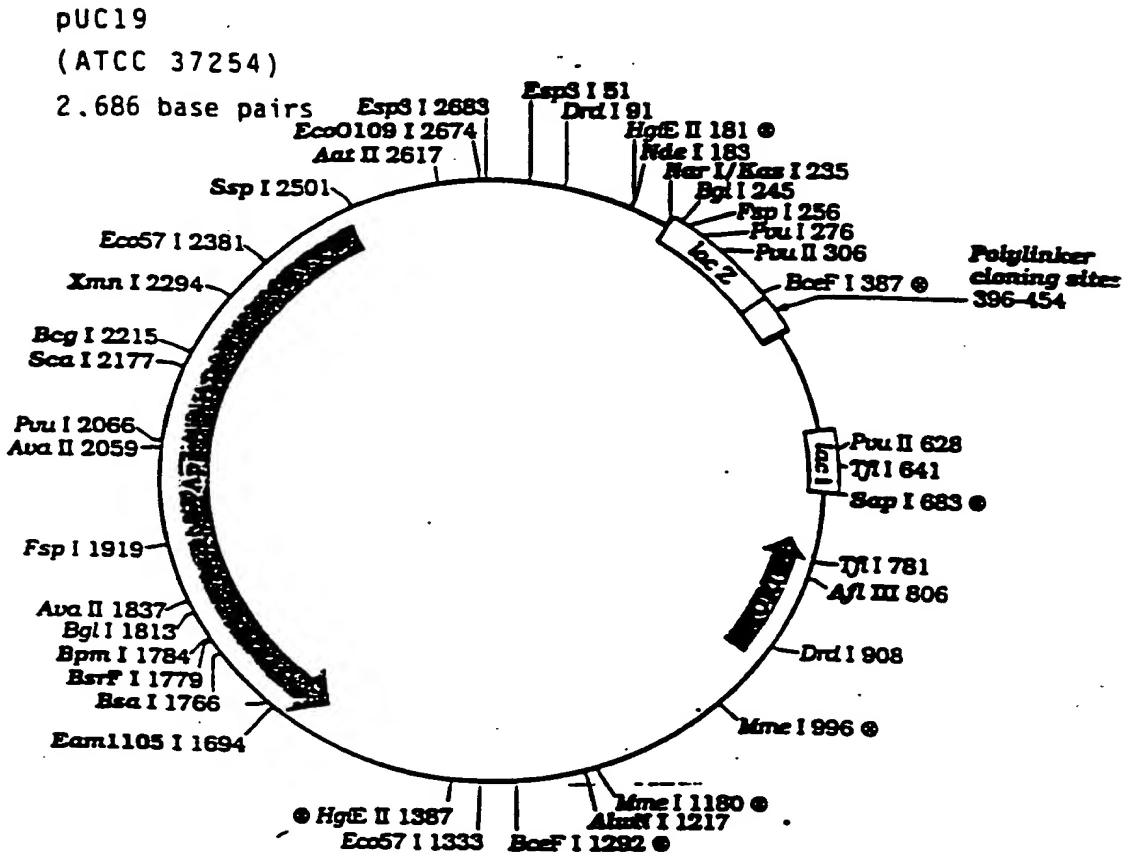
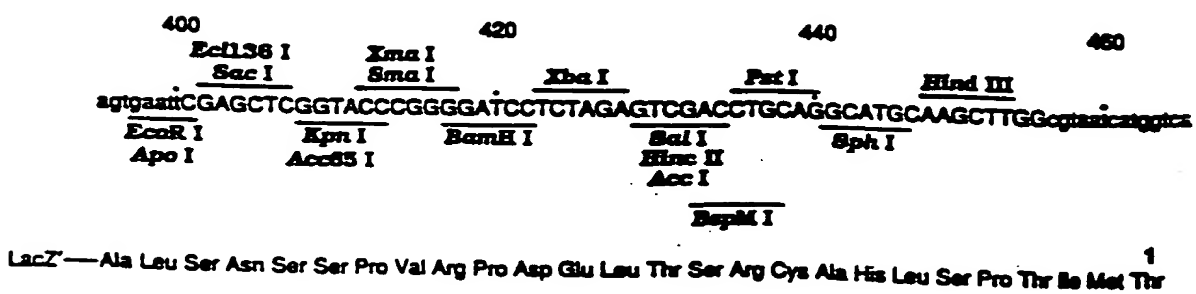


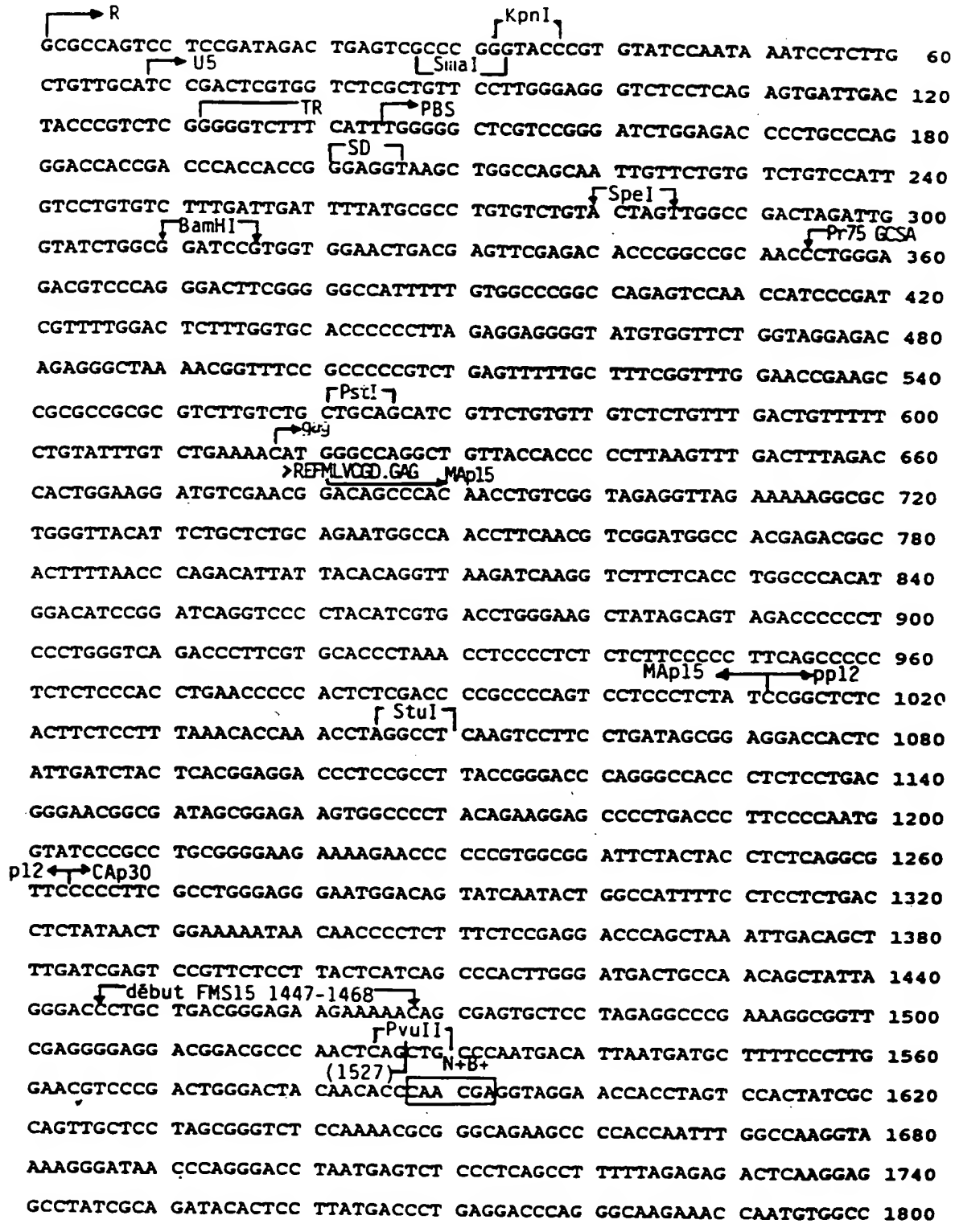
FIGURE 3





References
1. Yanisch-Perron, C., Vieira, J. and Messing, J. (1985) Gene 33, 103–119.
2. Genbank Accession # V80026 (Vecbase:pUC19c).

FIGURE 4



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TACCCGTCTC GGGGGTCTTT CATTTGGGGG CTCGTCCGGG ATCTGGAGAC CCCTGCCCAG 180
GGACCACCGA CCCACCACCG GGAGGTAAGC TGGCCAGCAA TTGTTCTGTG TCTGTCCATT 240
GTCCTGTGTC TTTGATTGAT TTTATGCGCC TGTGTCTGTA CTAGTTGGCC GACTAGATTG 300
GTATCTGGCG GATCCGTGGT GGAACTGACG AGTTCGAGAC ACCCGGCCGC AACCCTGGGA 360
GACGTCCCAG GGACTTCGGG GGCCATTTTT GTGGCCCGGC CAGAGTCCAA CCATCCCGAT 420
CGTTTTGGAC TCTTTGGTGC ACCCCCCTTA GAGGAGGGGT ATGTGGTTCT GGTAGGAGAC 480
AGAGGGCTAA AACGGTTTCC GCCCCCGTCT GAGTTTTTGC TTTCGGTTTG GAACCGAAGC 540
CGCGCCGCGC GTCTTGTCTG CTGCAGCATC GTTCTGTGTT GTCTCTGTTT GACTGTTTTT 600
CTGTATTTGT CTGAAAACAT GGGCCAGGCT GTTACCACCC CCTTAAGTTT GACTTTAGAC 660
CACTGGAAGG ATGTCGAACG GACAGCCCAC AACCTGTCGG TAGAGGTTAG AAAAAGGCGC 720
TGGGTTACAT TCTGCTCTGC AGAATGGCCA ACCTTCAACG TCGGATGGCC ACGAGACGGC 780
ACTTTTAACC CAGACATTAT TACACAGGTT AAGATCAAGG TCTTCTCACC TGGCCCACAT 840
GGACATCCGG ATCAGGTCCC CTACATCGTG ACCTGGGAAG CTATAGCAGT AGACCCCCCT 900
CCCTGGGTCA GACCCTTCGT GCACCCTAAA CCTCCCCTCT CTCTTCCCCC TTCAGCCCCC 960
TCTCTCCCAC CTGAACCCCC ACTCTCGACC CCGCCCCAGT CCTCCCTCTA TCCGGCTCTC 1020
ACTTCTCCTT TAAACACCAA ACCTAGGCCT CAAGTCCTTC CTGATAGCGG AGGACCACTC 1080
ATTGATCTAC TCACGGAGGA CCCTCCGCCT TACCGGGACC CAGGGCCACC CTCTCCTGAC 1140
GGGAACGGCG ATAGCGGAGA AGTGGCCCCT ACAGAAGGAG CCCCTGACCC TTCCCCAATG 1200
GTATCCCGCC TGCGGGGAAG AAAAGAACCC CCCGTGGCGG ATTCTACTAC CTCTCAGGCG 1260
TTCCCCCTTC GCCTGGGAGG GAATGGACAG TATCAATACT GGCCATTTTC CTCCTCTGAC 1320
CTCTATAACT GGAAAAATAA CAACCCCTCT TTCTCCGAGG ACCCAGCTAA ATTGACAGCT 1380
TTGATCGAGT CCGTTCTCCT TACTCATCAG CCCACTTGGG ATGACTGCCA ACAGCTATTA 1440
GGGACCCTGC TGACGGGAGA AGAAAAACAG CGAGTGCTCC TAGAGGCCCG AAAGGCGGTT 1500
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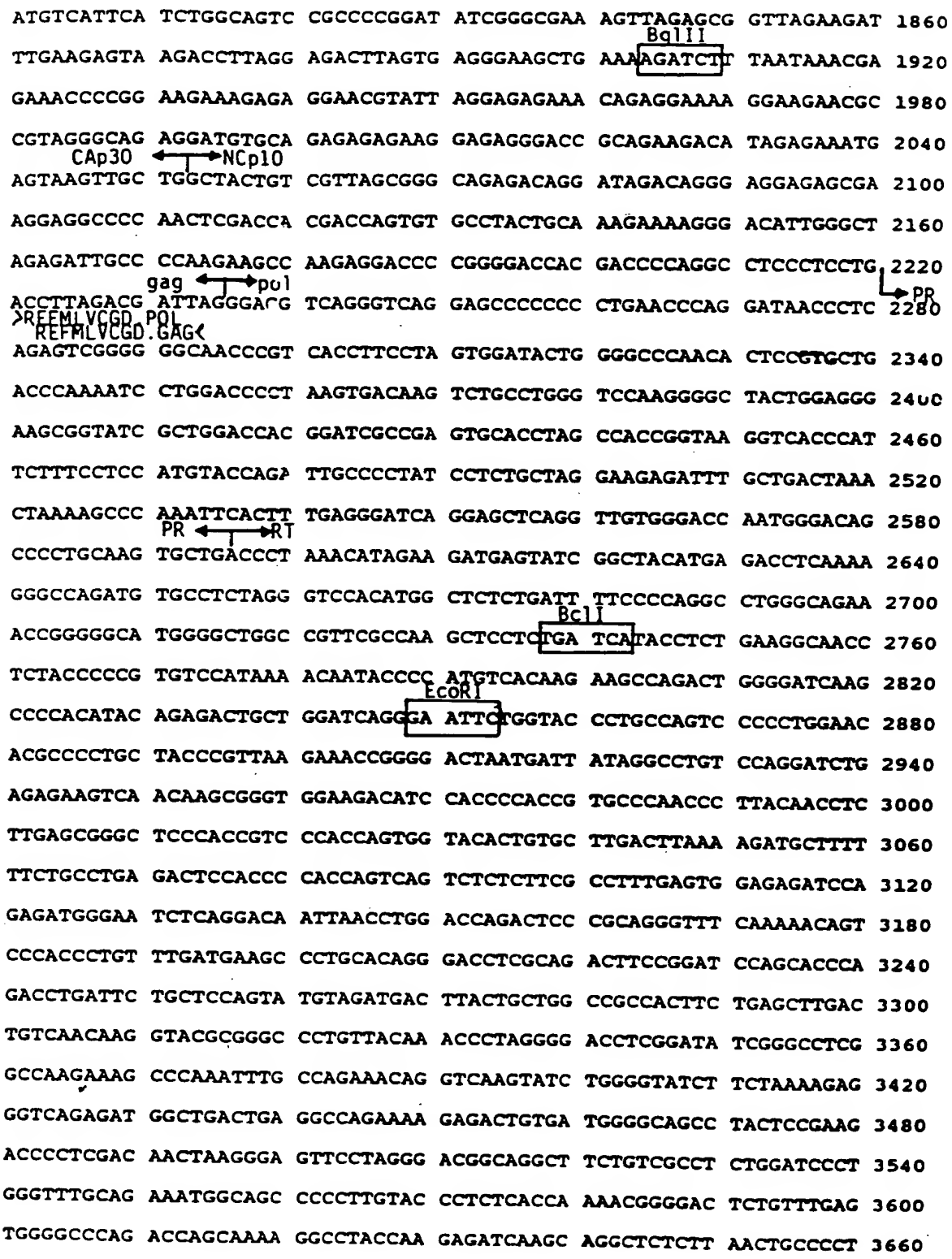
CAGTTGCTCC TAGCGGGTCT CCAAAACGCG GGCAGAAGCC CCACCAATTT GGCCAAGGTA 1680
AAAGGGATAA CCCAGGGACC TAATGAGTCT CCCTCAGCCT TTTTAGAGAG ACTCAAGGAG 1740
GCCTATCGCA GATACACTCC TTATGACCCT GAGGACCCAG GGCAAGAAAC CAATGTGGCC 1800

FIGURE 5A



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GAAACCCCGG AAGAAAGAGA GGAACGTATT AGGAGAGAAA CAGAGGAAAA GGAAGAACGC 1980
CGTAGGGCAG AGGATGTGCA GAGAGAGAAG GAGAGGGACC GCAGAAGACA TAGAGAAATG 2040
AGTAAGTTGC TGGCTACTGT CGTTAGCGGG CAGAGACAGG ATAGACAGGG AGGAGAGCGA 2100
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GAGATGGGAA TCTCAGGACA ATTAACCTGG ACCAGACTCC CGCAGGGTTT CAAAAACAGT 3180
CCCACCCTGT TTGATGAAGC CCTGCACAGG GACCTCGCAG ACTTCCGGAT CCAGCACCCA 3240
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GGGTTTGCAG AAATGGCAGC CCCCTTGTAC CCTCTCACCA AAACGGGGAC TCTGTTTGAG 3600
TGGGGCCCAG ACCAGCAAAA GGCCTACCAA GAGATCAAGC AGGCTCTCTT AACTGCCCCT 3660

FIGURE 5B

GCCCTGGGAT TGCCAGACTT GACTAAGCCC TTCGAACTTT TTGTTGACGA GAAGCAGGGC 3720
TACGCCAAAG GTGTCCTAAC GCAAAAACTG GGGCCTTGGC GTCGGCCGGT GGCCTACCTG 3780
TCCAAAAAGC TAGACCCAGT GGCAGCTGGG TGGCCCCCTT GCCTACGGAT GGTAGCAGCC 3840
ATCGCCGTTC TGACCAAAGA CGCTGGCAAG CTCACCATGG GACAGCCACT AGTCATTCTG 3900
GCCCCCCATG CAGTAGAGGC ACTAGTTAAG CAACCCCCTG ATCGCTGGCT CTCCAACGCC 3960
CGAATGACCC ACTACCAGGC TCTGCTTCTG GACACGGACC GAGTCCAGTT CGGACCAATA 4020
GTGGCCCTAA ACCCAGCTAC GCTGCTCCCT CTACCTGAGG AGGGGCTGCA ACATGACTGC 4080
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GACGCTGACC ACACCTGGTA CACAGATGGG AGCAGCTTCC TGCAAGAGGG GCAGCGCAAG 4200
GCCGGAGCAG CAGTAACCAC CGAGACCGAG GTAGTCTGGG CCAAAGCACT GCCAGCCGGG 4260
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GAGATCTTGG CCCTACTGAA GGCTCTCTTC CTGCCCAAAA GACTTAGCAT AATTCATTGC 4500
CCGGGACATC AGAAGGGAAA CCGCGCGGAG GCAAGGGGCA ACAGGATGGC CGACCAAGCG 4560
GCCCGAGAAG TAGCCACTAG AGAAACTCCA GAGACTTCCA CACTTCTGAT AGAAAATTCA 4620
GCCCCCTATA CTCATGAACA TTTTCACTAT ACGGTGACTG ACATAAAAGA TCTGACTAAA 4680
CTAGGGGCCA CTTATGACGA TGCAAAGAAG TGTTGGGTTT ATCAGGGAAA GCCTGTAATG 4740
CCTGATCAAT TCACCTTTGA ACTATTAGAT TTTCTTCATC AATTGACCCA CCTCAGTTTC 4800
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CGAACGCTCA AAGACATCAC TGAGACTTGC CAAGCCTGTG CACAGGTCAA TGCCAGCAAG 4920
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ACAATCAAGG AGACTTTAAC TAAATTGACG CTTGCAACTG GCTCTAGGGA CTGGGTGCTC 5340
CTGCTTCCCC TAGCCCTGTA TCGAGCCCGC AACACGCCGG GCCCCCATGG TCTCACCCCA 5400

FIGURE 5C

TATGAAATCT TATATGGGGC ACCCCCGCCC CTTGTAAACT TCCCTGATCC TGACATGGCA 5460

AAGGTTACTC ATAACCCCTC TCTCCAAGCC CATTTACAGG CACTCTACCT GGTCCAGCAC 5520

GAAGTCTGGA GACCGTTGGC GGCAGCTTAC CAAGAACAAC TGGACCGGCC GGTAGTGCCT 5580

CACCCTTTCC GAGTCGGTGA CACAGTGTGG GTCCGCAGAC ACCAAACTAA AAATCTAGAA 5640

CCCCGCTGGA AAGGACCTTA TACCGTCCTA CTGACTACCC CCACCGCTCT CAAAGTGGAC 5700

GGCATTGCAG CGTGGATCCA CGCTGCCCAC GTAAAGGCTG CCGACACCAG GATTGAGCCA 5760

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REFMLVCGD.POL<

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CCCCAGATTT GTGTATGTTA GCTCTCAGTG GGCCGCCCCA CTGGGGGCTA GAGTATCAGG 6060

CCCCCTATTC CTCGCCCCCG GGGCCCCCTT GTTGCTCAGG GAGCAGCGGG AACGTTGCAG 6120

GCTGTGCCAG AGACTGCAAC GAGCCCTTGA CCTCCCTCAC CCCTCGGTGC AACACTGCCT 6180

GGAACAGACT TAAGCTGGAC CAGGTAACTC ATAAATCAAG TGAGGGATTT TATGTCTGCC 6240

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CCTCTTGGGG CTGCGAGACA ACCGGTAGAG TATACTGGAA GCCCTCCTCT TCTTGGGACT 6360

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CAACTGGACA CTATTGGGGT CTACGTCTTT ATGTCTCTGG ACAGGACCCA GGGCTTACTT 6540

TCGGGATCCG ACTCAGTTAT CAAAATCTAG GACCTCGGAT CCCAATAGGA CCAAACCCCG 6600

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GCTCCGTGGC CTCCCAACAC AAGCTGACCC TGTCCGAAGT GACTGGACGG GGACTCTGCA 6960

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CATGCCTATC TGCCACCGTG CTTAATCGCA CCACTGACTA TTGCGTTCTC GTGGAATTAT 7140

FIGURE 5D

GGCCCAGGGT CACCTACCAT CCTCCCAGTT ACGTCTATAG CCAGTTTGAA AAATCCCATA 7200

GACATAAAAG AGAACCAGTG TCCTTAACCT TGGCCTTATT ATTAGGTGGG CTAACTATGG 7260

GTGGCATCGC CGCGGGAGTA GGGACAGGAA CTACCGCCCT GGTCGCCACC CAGCAGTTTC 7320

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TTGCTTAGCC TGATAGCCGC AGTAACGCCA TTTTGCAAGG CATGGAAAAA TACCAAACCA 7920

LTR 81

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GGATATCTGC GGTGAGCAGT TTCGGCCCCG GCCCGGGGCC AAGAACAGAT GGTCACCGCG 8040

LTR +281

GTTCGGCCCC GGCCCGGGGC CAAGAACAGA TGGTCCCCAG ATATGGCCCA ACCCTCAGCA 8100

GTTTCTTAAG ACCCATCAGA TGTTTCCAGG CTCCCCCAAG GACCTGAAAT GACCCTGTGC 8160

U3 ⟷ R

CTTATTTGAA TTAACCAATC AGCCTGCTTC TCGCTTCTGT TCGCGCGCTT CTGCTTCCCG 8220

AGCTCTATAA AAGAGCTCAC AACCCCTCAC TCGGCGCGCC AGTCCTCCGA TAGACTGAGT 8280

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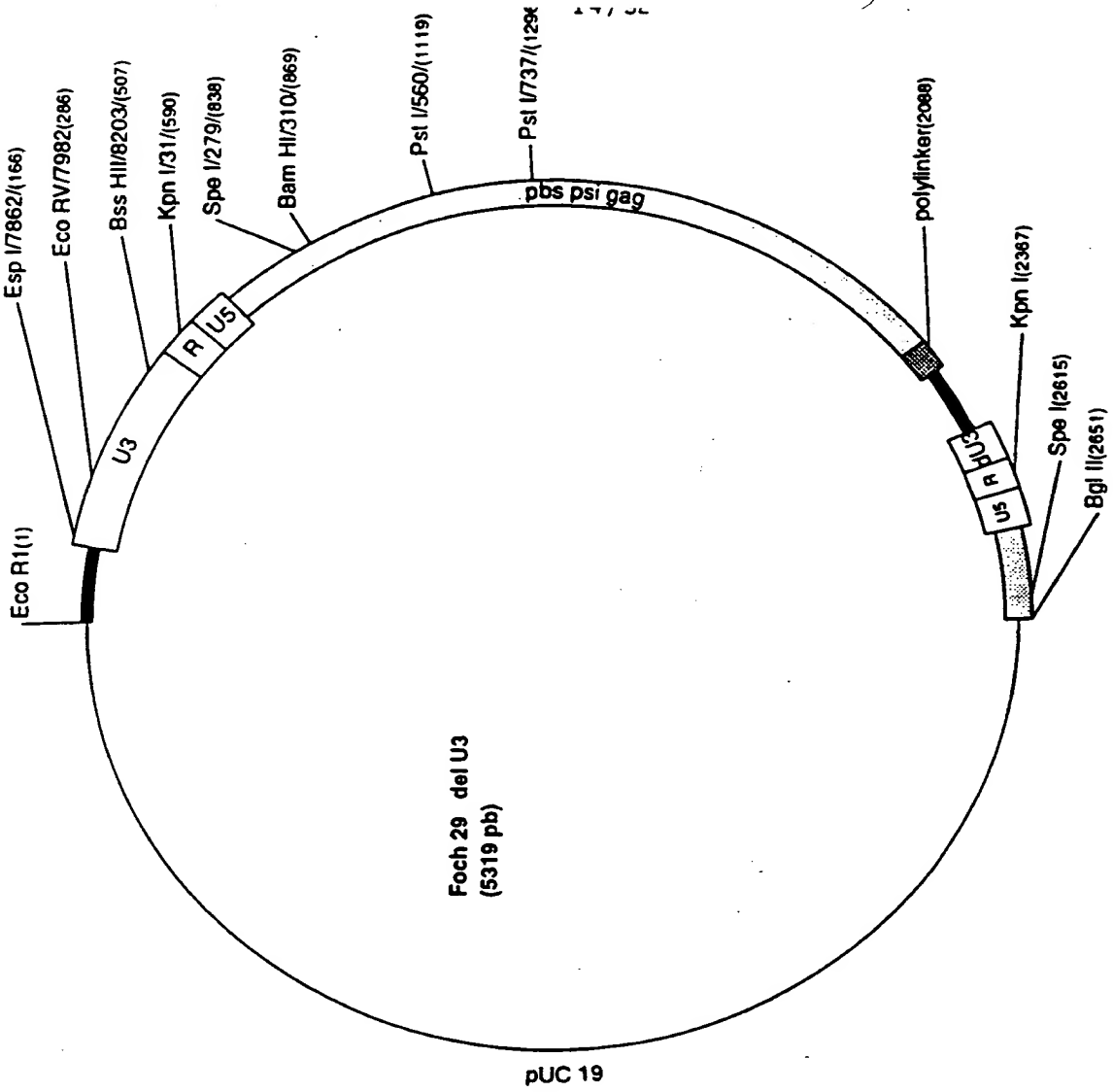
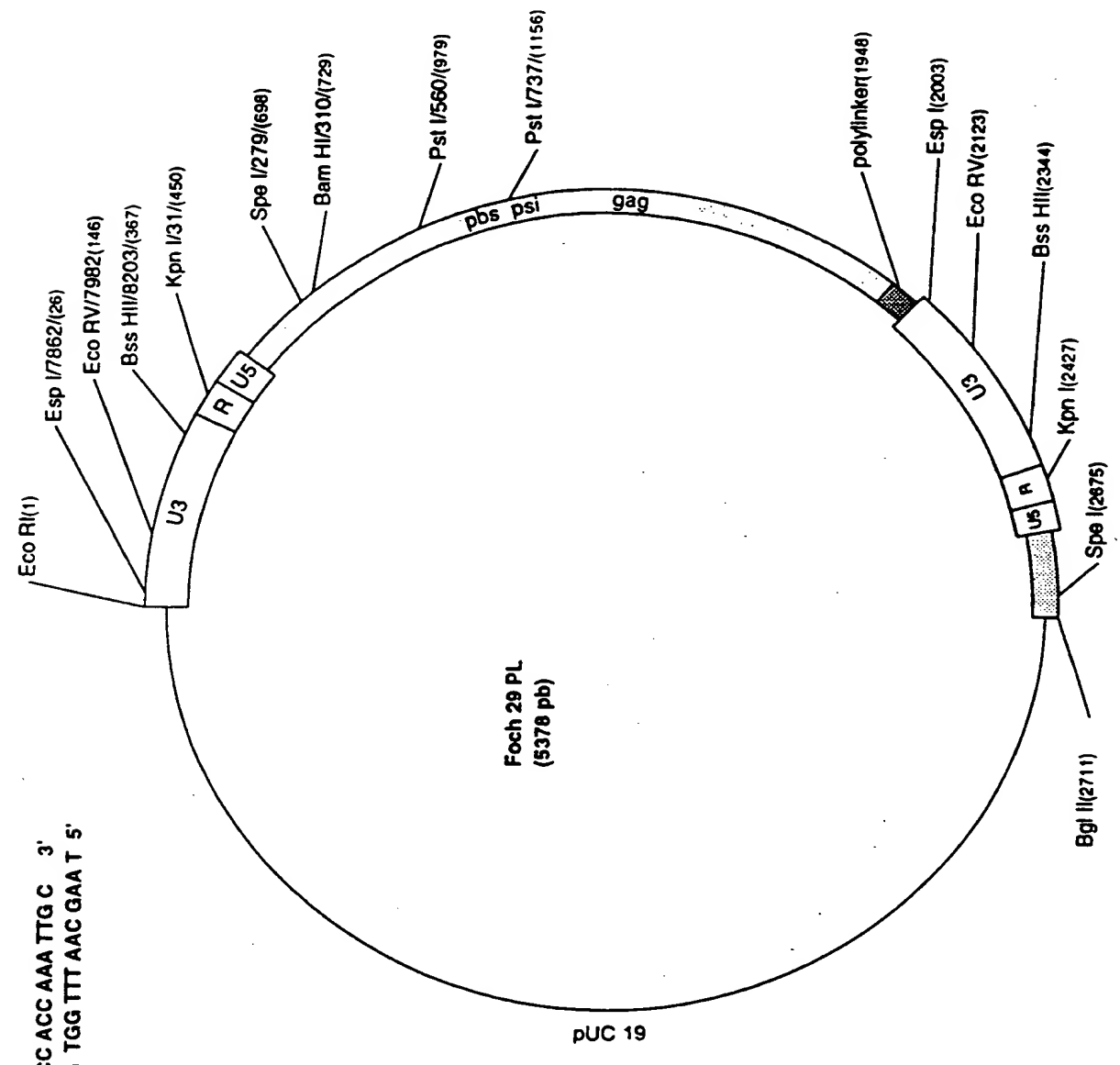
FIGURE 5E



polylinker :
Bam HI : 2088
Xba I : 2094
Sal I : 2100
Pst I : 2106
Sph I : 2112

FIGURE 6



linker en 5' de U3 :
5' AAT TCA ATG AAA GAC CCC ACC AAA TTG C 3'
3' GT TAC TTT CTG GGG TGG TTT AAC GAA T 5'

polylinker
Bam HI : 1948
Xba I : 1954
Sal I : 1960
Pst I : 1966
Sph I : 1972

FIGURE 7

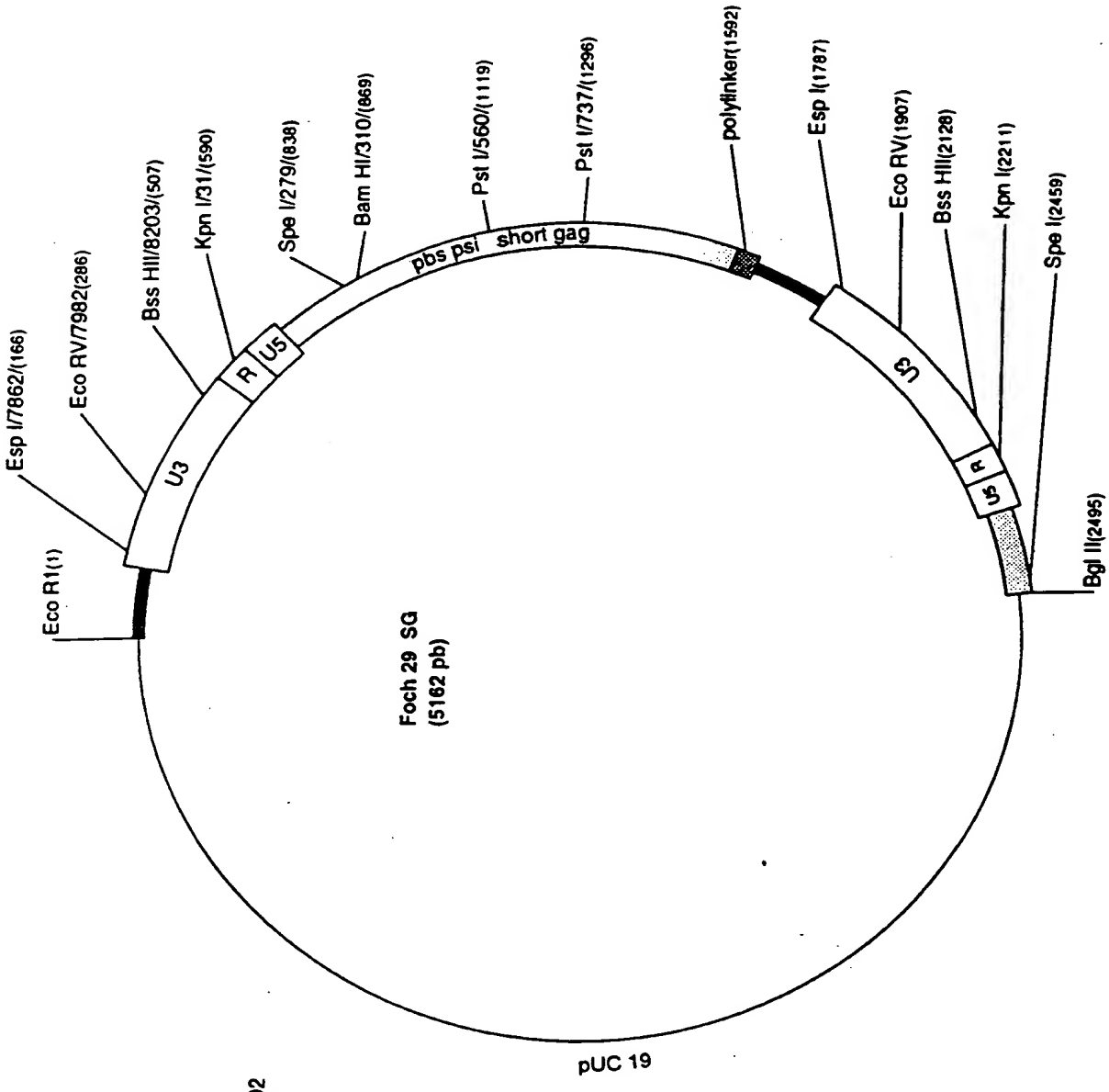

Esp I/7862/(166)
Eco RV/7982(286)
Bss HII/8203/(507)
Kpn I/31/(590)
Spe I/279/(838)
Bam HI/310/(869)
Pst I/560/(1119)
Pst I/737/(1296)
polylinker(1592)
Esp I(1787)
Eco RV(1907)
Bss HII(2128)
Kpn I(2211)
Spe I(2459)
Bgl II(2495)
Eco R1(1)
U3
R
U5
pbs psi
short gag
Foch 29 SG
(5162 pb)
pUC 19
polylinker :
Bam HI : 1592
Xba I : 1598
Sal I : 1604
Pst I : 1610
Sph I : 1616

FIGURE 8

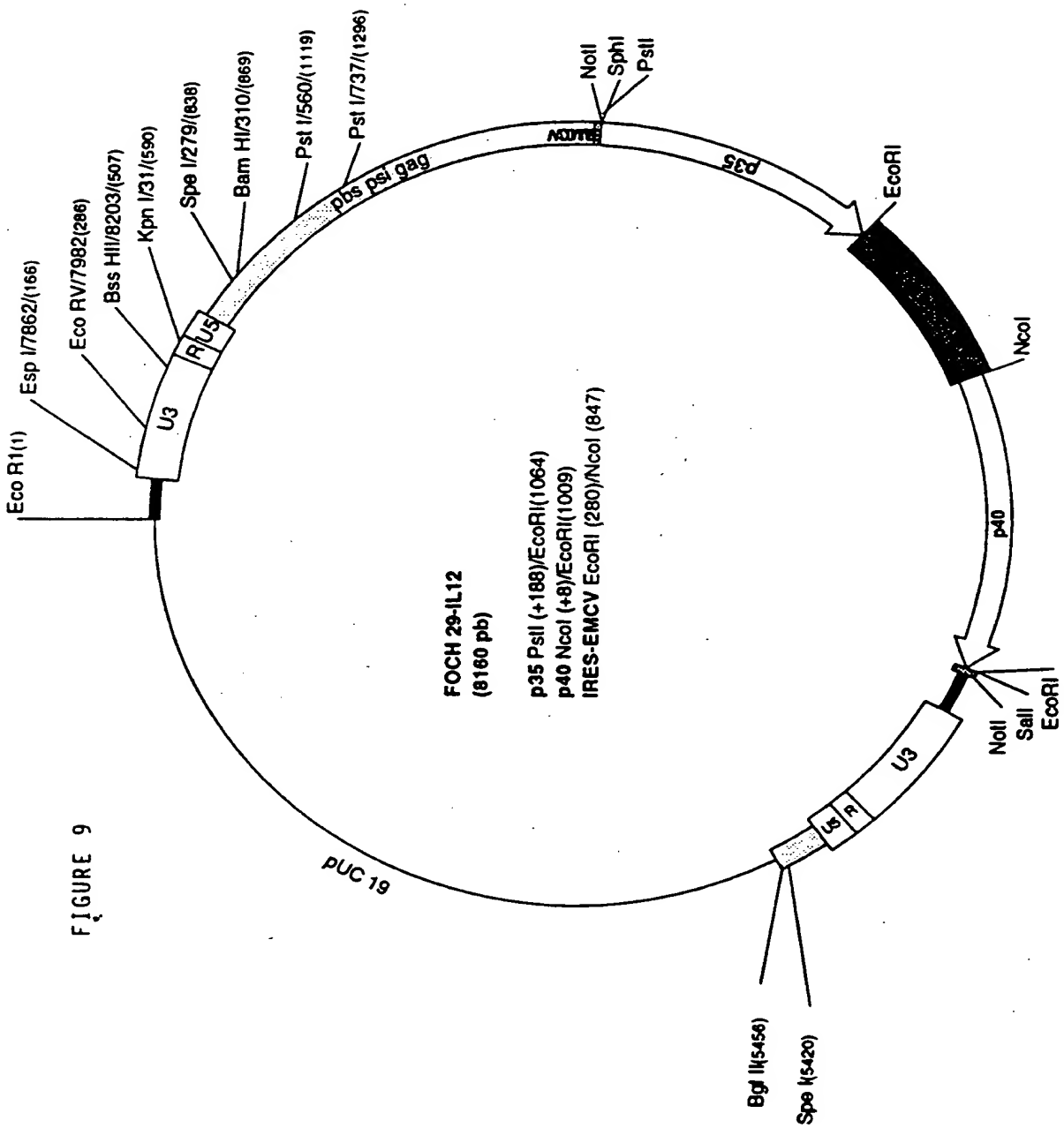


FIGURE 9

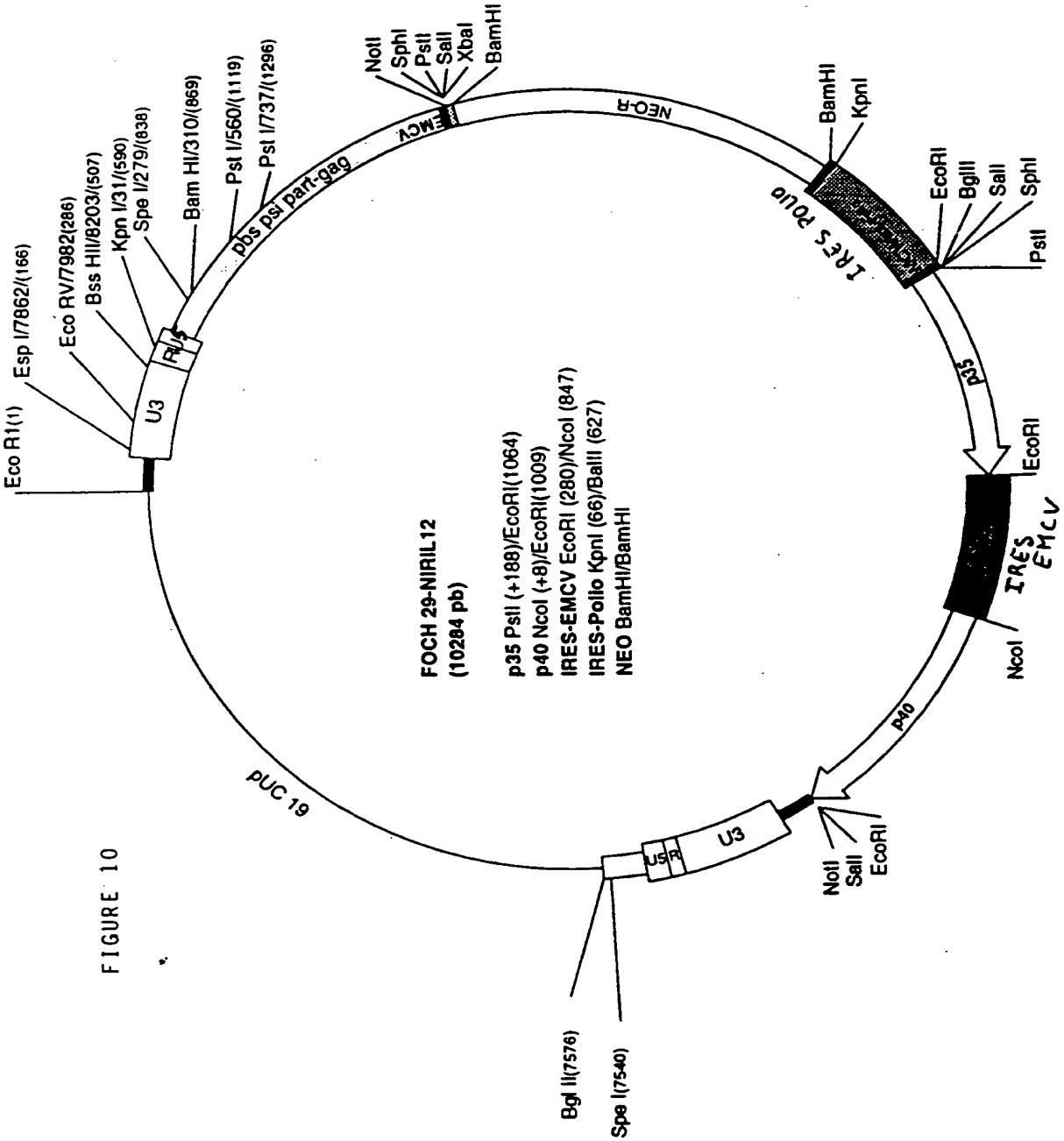

FOCH 29-NIRIL12
(10284 pb)
p35 PstI (+188)/EcoRI(1064)
p40 NcoI (+8)/EcoRI(1009)
IRES-EMCV EcoRI (280)/NcoI (847)
IRES-Polio KpnI (66)/BalII (627)
NEO BamHI/BamHI
pUC 19
NEO-R
IRES Polio
p35
p40
IRES EMCV
U3
R
U5
EMCV
pbs psi part-gag
Eco R1(1)
Esp I/7862/(166)
Eco RV/7982(286)
Bss HII/8203/(507)
Kpn I/31/(590)
Spe I/279/(838)
Bam HI/310/(869)
Pst I/560/(1119)
Pst I/737/(1296)
NotI
SphI
PstI
SalI
XbaI
BamHI
BamHI
KpnI
EcoRI
BglII
SalI
SphI
PstI
EcoRI
NcoI
NotI
SalI
EcoRI
Bgl II(7576)
Spe I(7540)

FIGURE 10

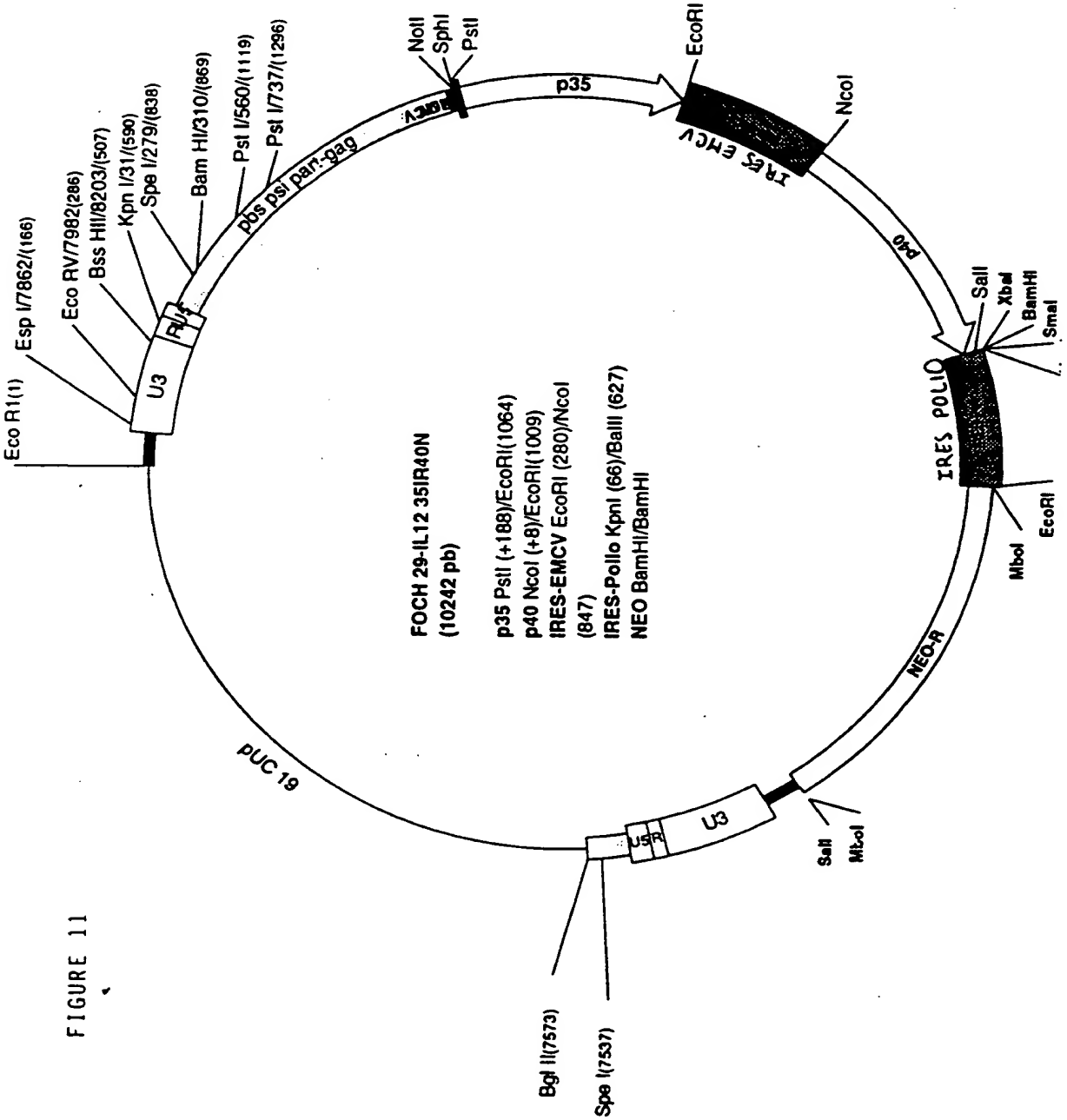

FOCH 29-IL12 35IR40N
(10242 pb)
p35 PstI (+188)/EcoRI(1064)
p40 NcoI (+8)/EcoRI(1009)
IRES-EMCV EcoRI (280)/NcoI (847)
IRES-Pollo KpnI (66)/BalII (627)
NEO BamHI/BamHI
Eco R1(1)
Esp I/7862/(166)
Eco RV/7982(286)
Bss HII/8203/(507)
Kpn I/31/(590)
Spe I/279/(838)
Bam HI/310/(869)
Pst I/560/(1119)
Pst I/737/(1296)
pbs psi pari-gag
NoII
SphI
PstI
p35
EcoRI
NcoI
IRES EMCV
p40
SalI
XbaI
BamHI
SmaI
IRES POLIO
EcoRI
MboI
NEO-R
SalI
MboI
U3
U5R
pUC 19
Bgl II(7573)
Spe I(7537)

FIGURE 11

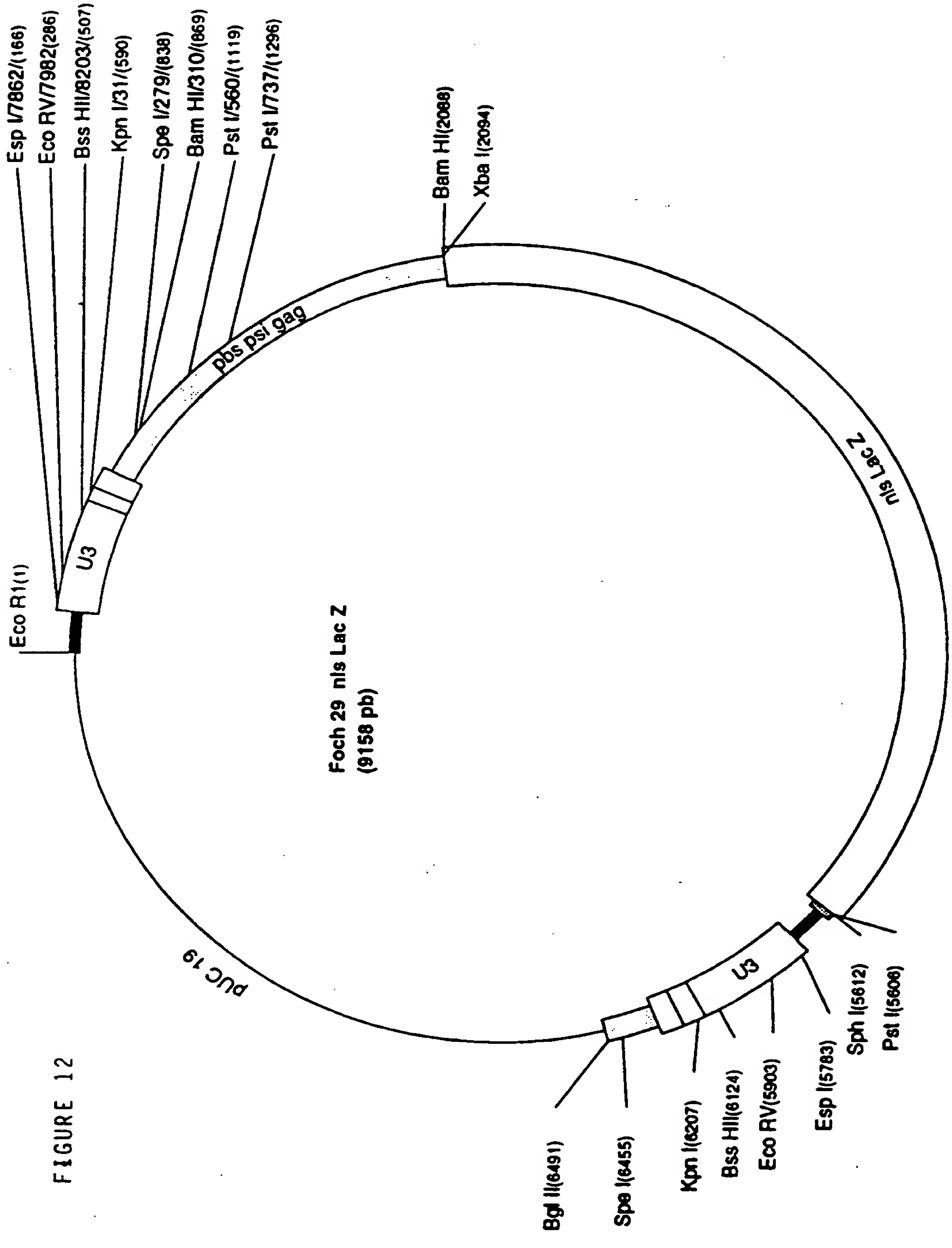

Esp I/7862/(166)
Eco RV/7982(286)
Bss HII/8203/(507)
Kpn I/31/(590)
Spe I/279/(838)
Bam HI/310/(869)
Pst I/560/(1119)
Pst I/737/(1296)
Bam HI(2088)
Xba I(2094)
pbs psi gag
nls Lac Z
U3
Eco R1(1)
Foch 29 nls Lac Z
(9158 pb)
pUC 19
U3
Bgl II(6491)
Spe I(6455)
Kpn I(6207)
Bss HII(6124)
Eco RV(5903)
Esp I(5783)
Sph I(5612)
Pst I(5606)

FIGURE 12

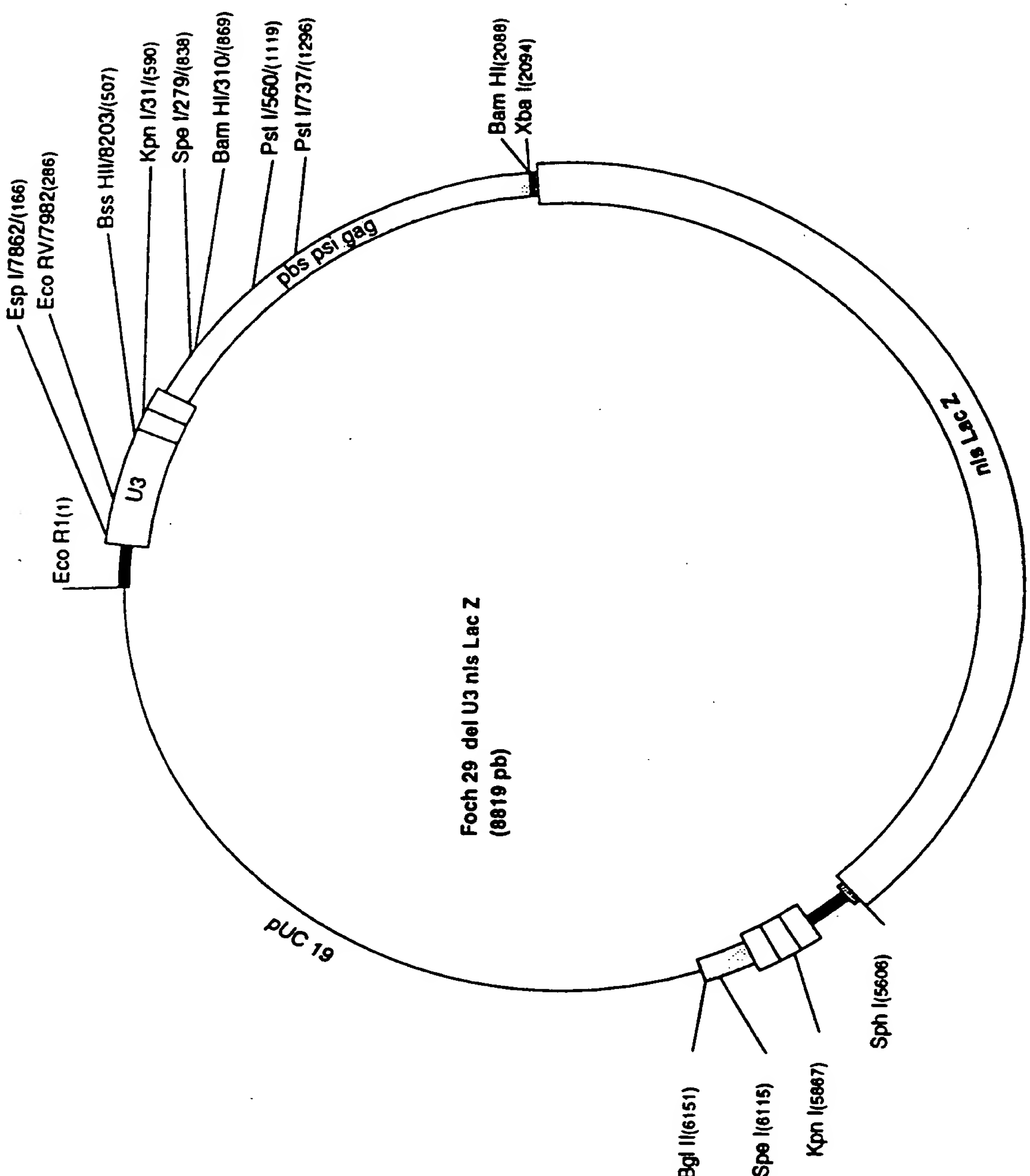

Foch 29 del U3 nls Lac Z
(8819 pb)
Eco R1(1)
Esp I/7862/(166)
Eco RV/7982(286)
Bss HII/8203/(507)
Kpn I/31/(590)
Spe I/279/(838)
Bam HI/310/(869)
Psl I/560/(1119)
Psl I/737/(1296)
Bam HI(2088)
Xba I(2094)
U3
pbs psi gag
nls Lac Z
Sph I(5606)
Kpn I(5867)
Spe I(6115)
Bgl II(6151)
pUC 19

FIGURE 13

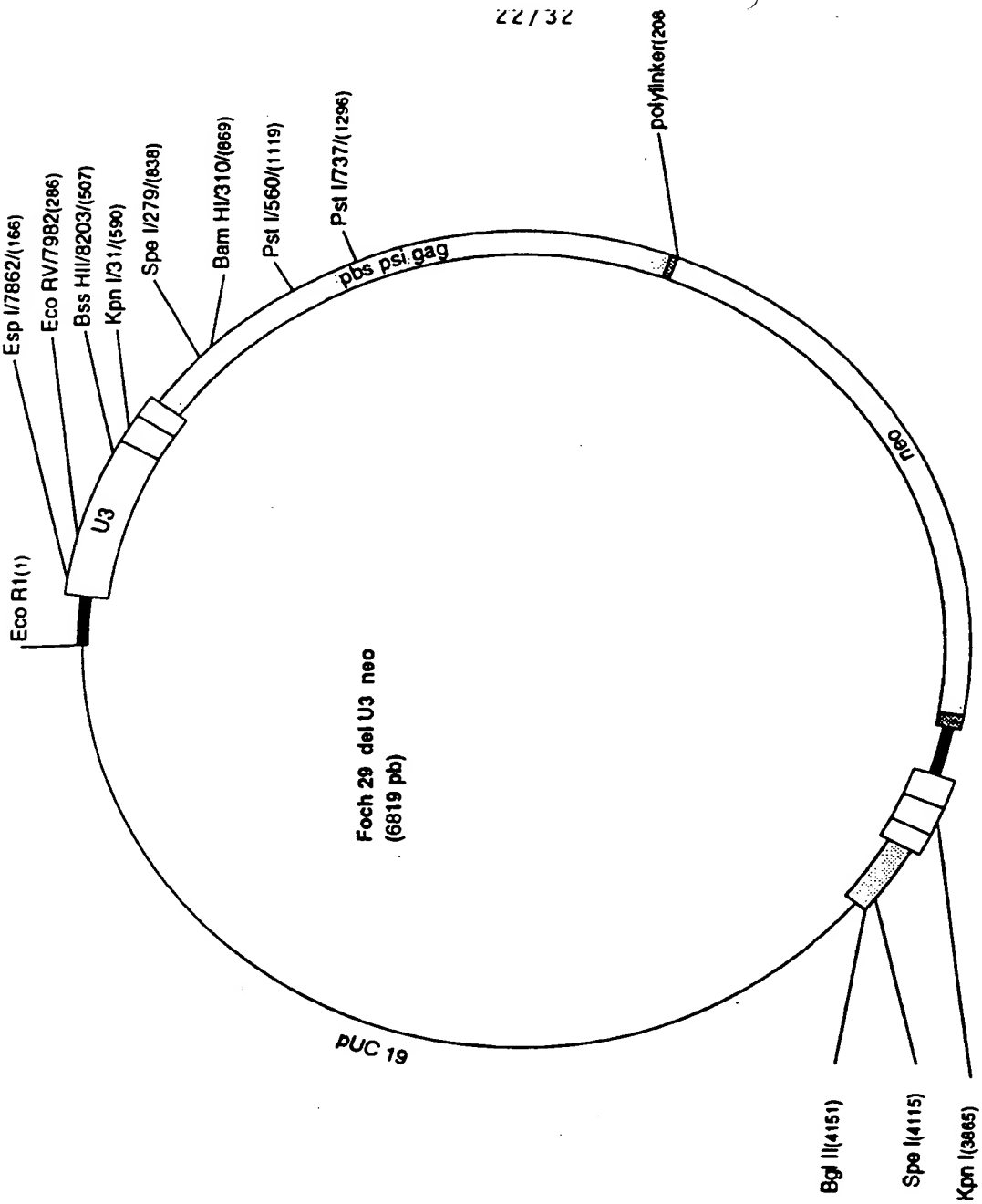

polylinker(208
Pst I/737/(1296)
Pst I/560/(1119)
Bam HI/310/(869)
Spe I/279/(838)
Kpn I/31/(590)
Bss HIII/8203/(507)
Eco RV/7982(286)
Esp I/7862/(166)
Eco R1(1)
pbs psi gag
U3
neo
Foch 29 del U3 neo
(6819 pb)
pUC 19
Bgl II(4151)
Spe I(4115)
Kpn I(3865)

FIGURE 14

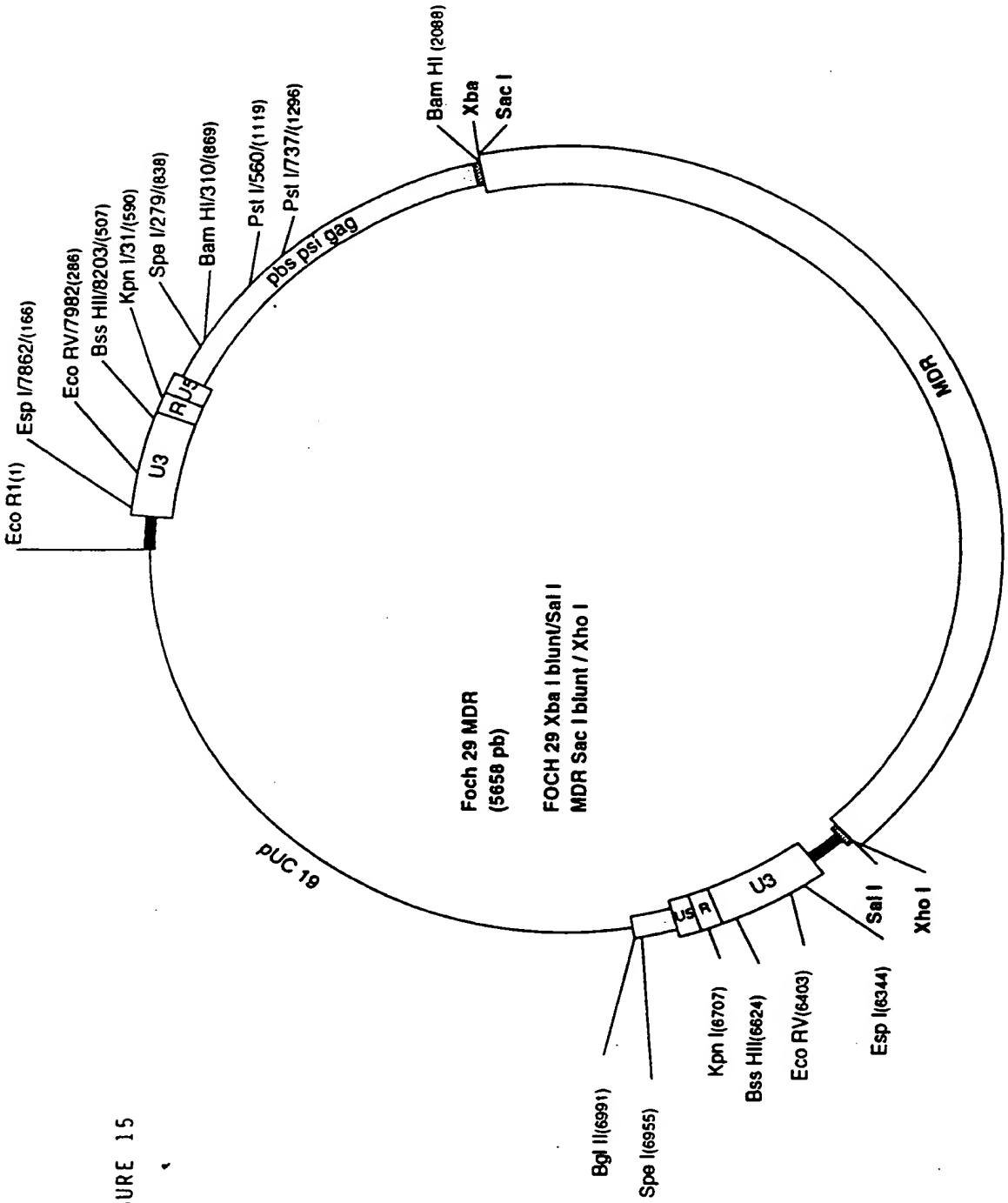

Eco R1(1)
Esp I/7862/(166)
Eco RV/7982/(286)
Bss HII/8203/(507)
Kpn I/31/(590)
Spe I/279/(838)
Bam HI/310/(869)
Pst I/560/(1119)
Pst I/737/(1296)
Bam HI (2088)
Xba
Sac I
U3
R
U5
pbs psi gag
MDR
pUC 19
Foch 29 MDR
(5658 pb)
FOCH 29 Xba I blunt/Sal I
MDR Sac I blunt / Xho I
Bgl II(6991)
Spe I(6955)
Kpn I(6707)
Bss HII(6624)
Eco RV(6403)
Esp I(6344)
Sal I
Xho I

FIGURE 15

Inventor: COHEN-HAGUENAUER
Docket No.: 8076.110USC2
Tit[illegible]TROVIRAL VECTOR FOR THE TRANSFER AND EXPRESSION [illegible]NES FOR
TH[illegible]UTIC PURPOSES IN EUKARYOTIC CELLS
Att[illegible] Name: Katherine M. Kowalchyk
Phone No.: 612-371-5311

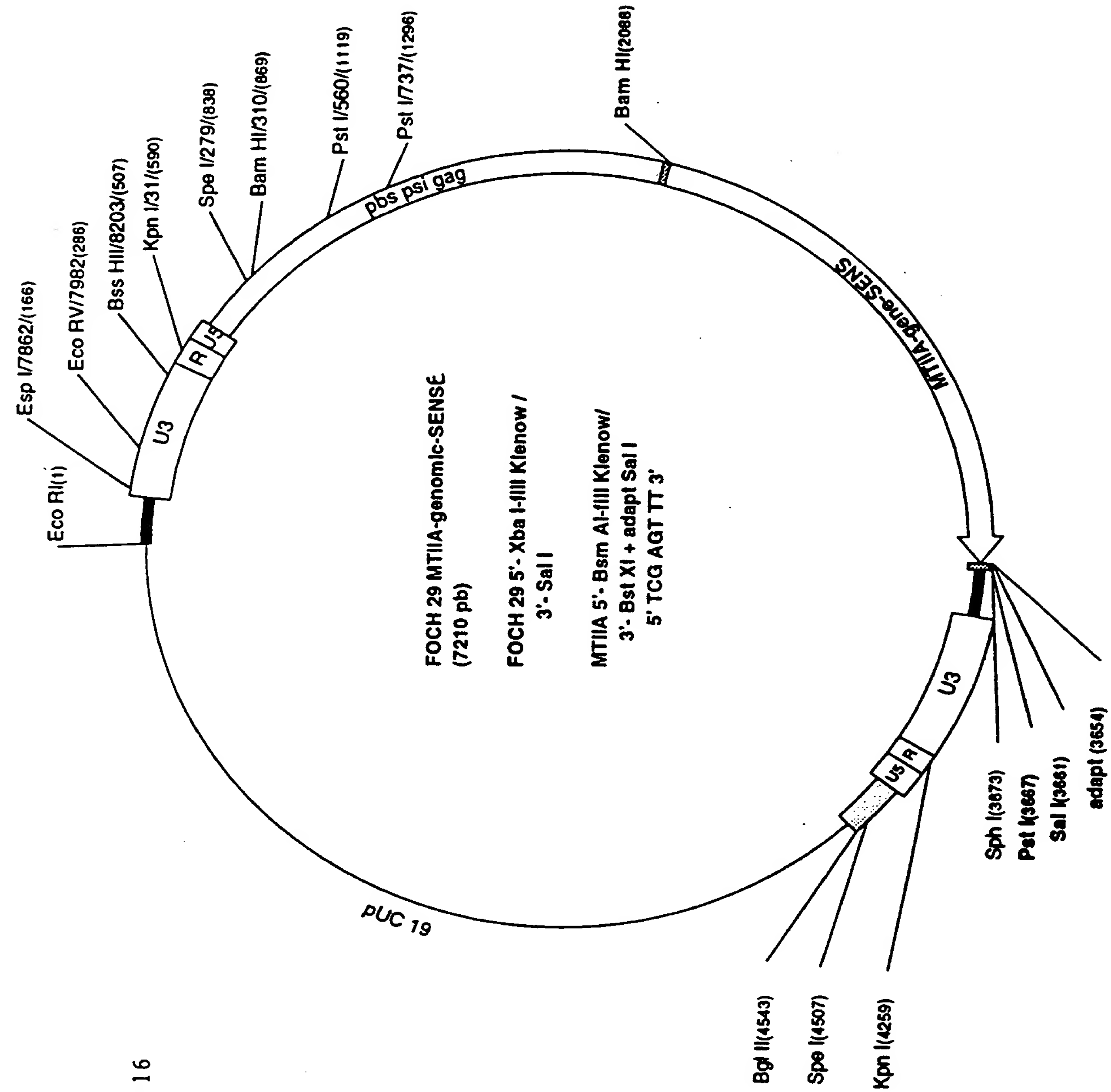


FIGURE 16

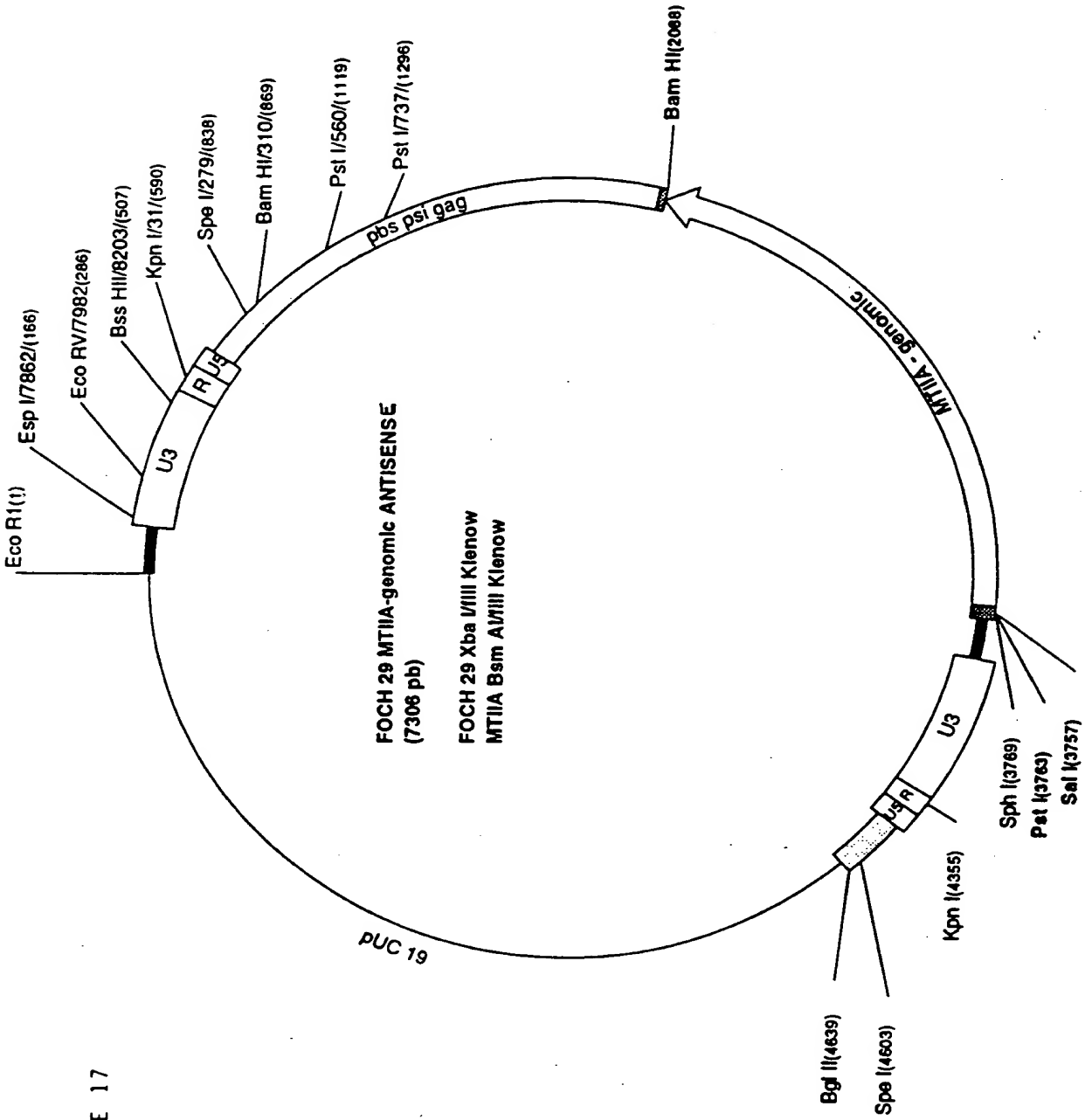
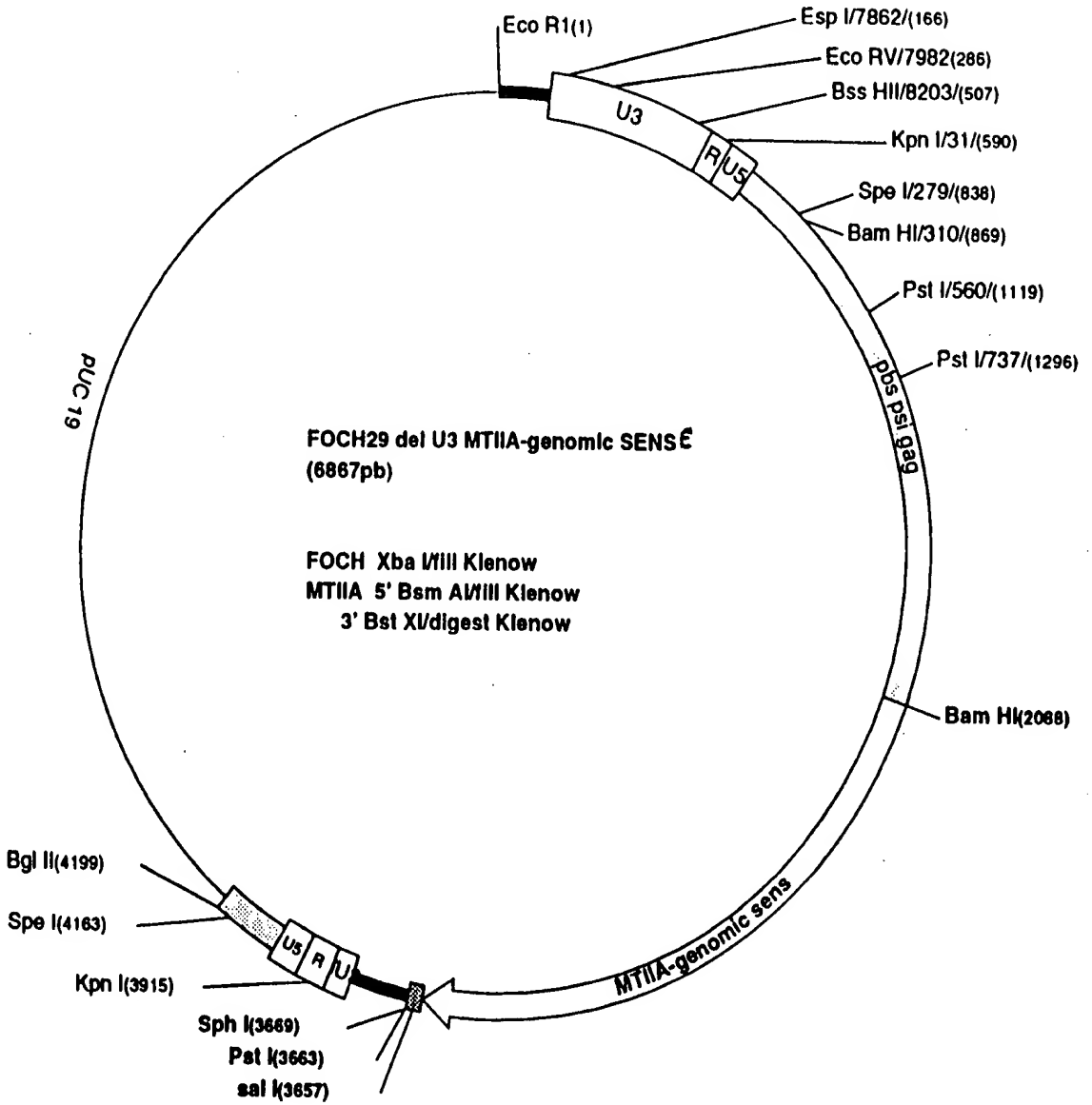

Eco R1(1)
Esp I/7862/(166)
Eco RV/7982(286)
Bss HII/8203/(507)
Kpn I/31/(590)
Spe I/279/(838)
Bam HI/310/(869)
Pst I/560/(1119)
Pst I/737/(1296)
Bam HI(2068)
pbs psi gag
MTIIA - genomic
U3
R
U5
FOCH 29 MTIIA-genomic ANTISENSE
(7306 pb)
FOCH 29 Xba I/IIII Klenow
MTIIA Bsm AI/IIII Klenow
pUC 19
Bgl II(4639)
Spe I(4603)
Kpn I(4355)
Sph I(3769)
Pst I(3763)
Sal I(3757)

FIGURE 17

FIGURE 18



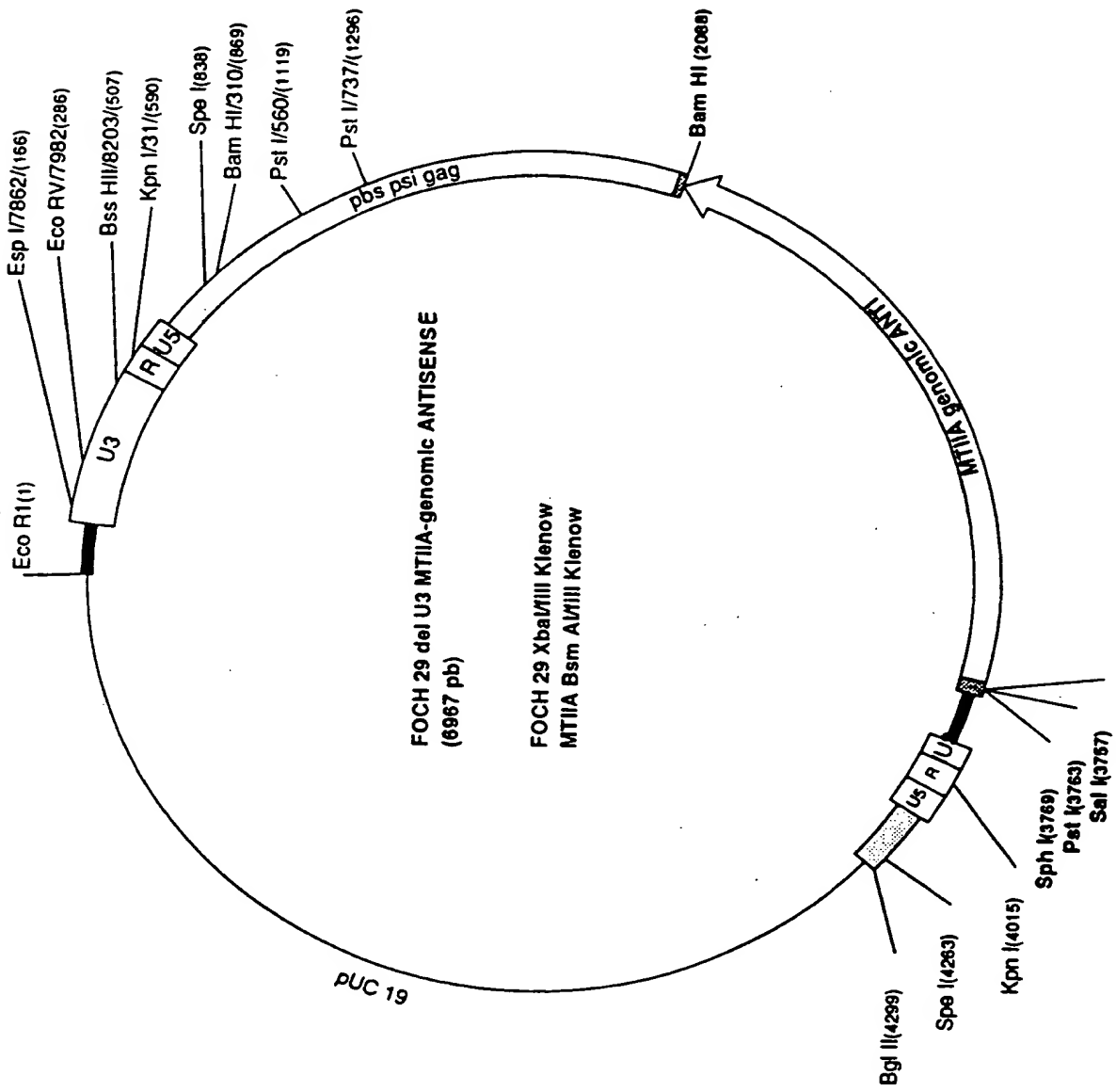

Esp I/7862/(166)
Eco RV/7982(286)
Bss HIII/8203/(507)
Kpn I/31/(590)
Spe I(838)
Bam HI/310/(869)
Pst I/560/(1119)
Pst I/737/(1296)
Bam HI (2068)
pbs psi gag
U3
R
U5
Eco R1(1)
FOCH 29 del U3 MTIIA-genomic ANTISENSE
(6967 pb)
FOCH 29 XbaI/VIII Klenow
MTIIA Bsm AI/VIII Klenow
MTIIA genomic ANT
U3
R
U5
pUC 19
Bgl II(4299)
Spe I(4283)
Kpn I(4015)
Sph I(3769)
Pst I(3763)
Sal I(3757)

FIGURE 19

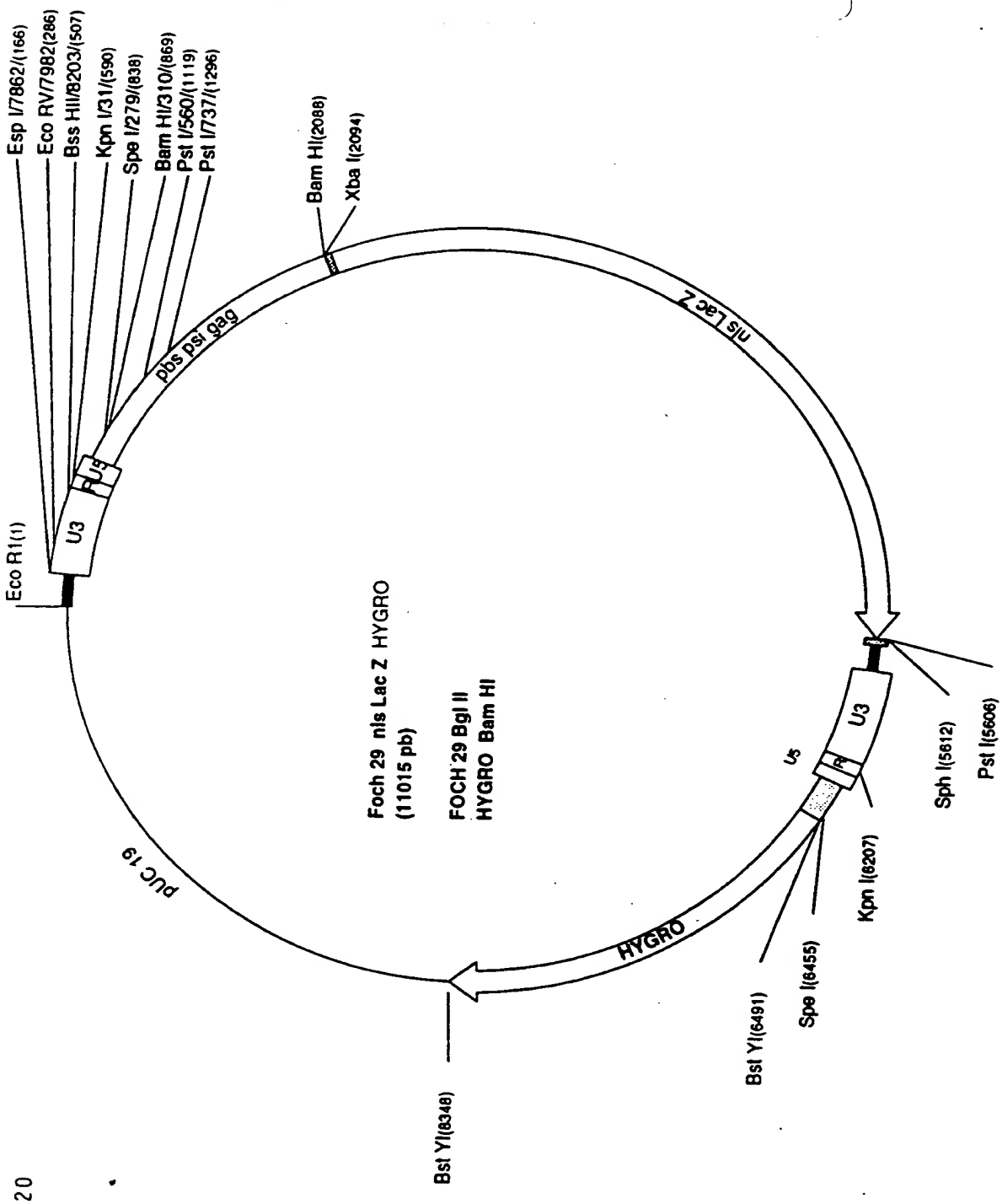

Esp I/7862/(166)
Eco RV/7982(286)
Bss HII/8203/(507)
Kpn I/31/(590)
Spe I/279/(838)
Bam HI/310/(869)
Pst I/560/(1119)
Pst I/737/(1296)
Bam HI(2088)
Xba I(2094)
Eco R1(1)
U3
R
U5
pbs psi gag
nls LacZ
U3
R
U5
Sph I(5612)
Pst I(5606)
Kpn I(6207)
Spe I(6455)
Bst YI(6491)
HYGRO
Bst YI(8348)
PUC 19
Foch 29 nls Lac Z HYGRO
(11015 pb)
FOCH 29 Bgl II
HYGRO Bam HI

FIGURE 20

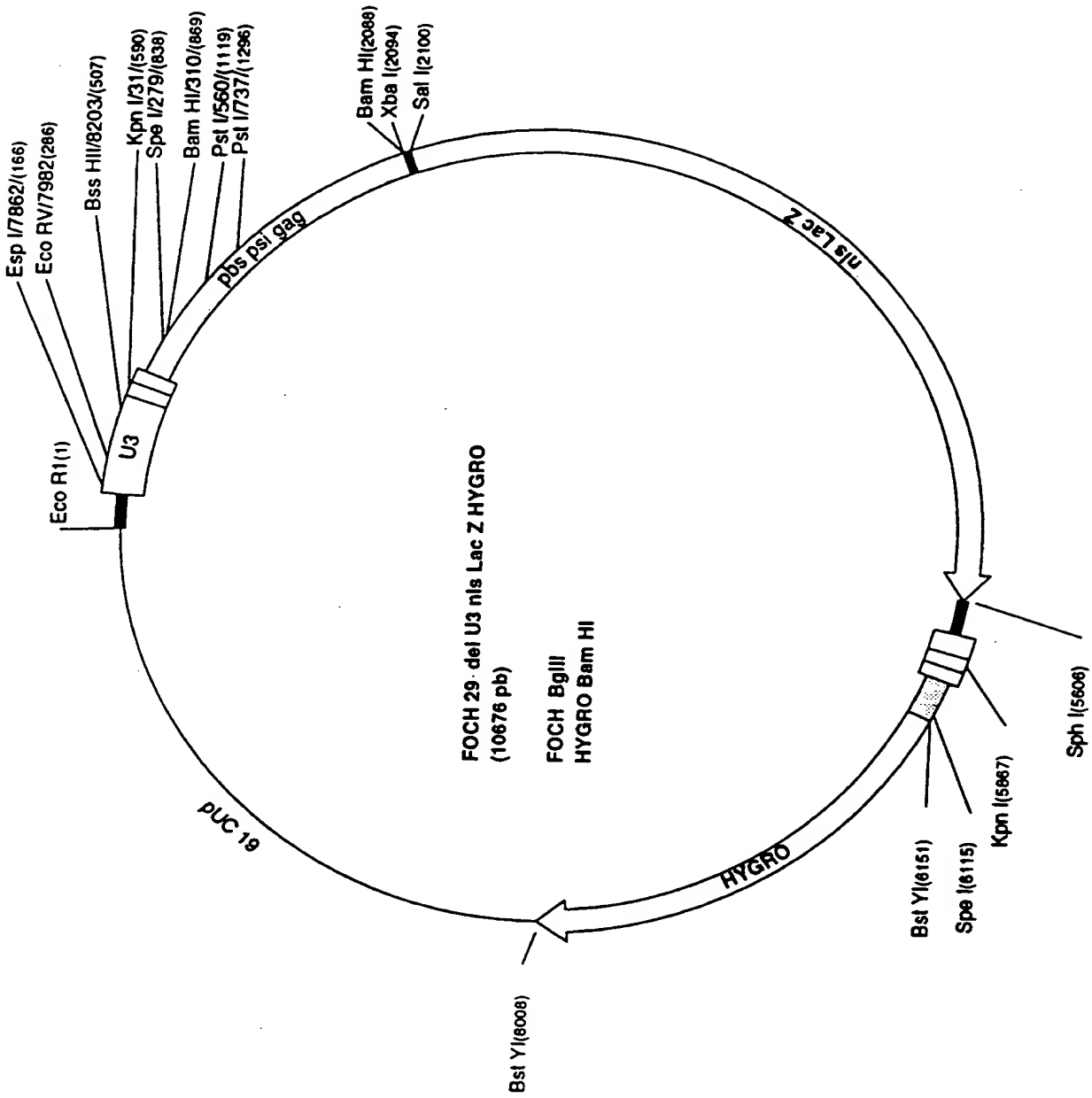

Esp I/7862/(166)
Eco RV/7982(286)
Bss HII/8203/(507)
Kpn I/31/(590)
Spe I/279/(838)
Bam HI/310/(869)
Pst I/560/(1119)
Pst I/737/(1296)
Bam HI(2088)
Xba I(2094)
Sal I(2100)
pbs psi gag
nls Lac Z
U3
Eco R1(1)
FOCH 29 del U3 nls Lac Z HYGRO
(10676 pb)
FOCH BglII
HYGRO Bam HI
pUC 19
HYGRO
Bst YI(6151)
Spe I(6115)
Kpn I(5867)
Sph I(5606)
Bst YI(8008)

FIGURE 21

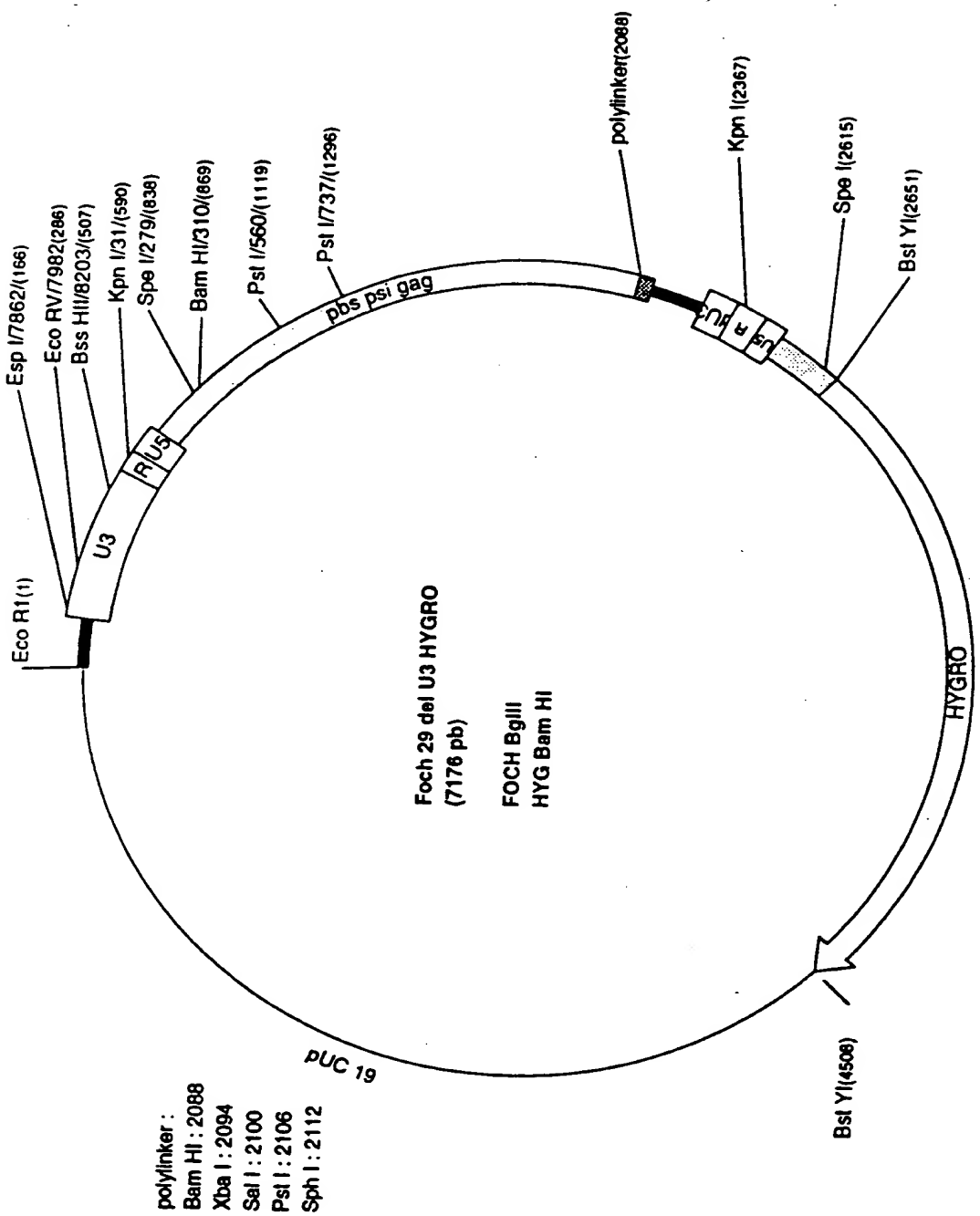

Esp I/7862/(166)
Eco RV/7982(286)
Bss HII/8203/(507)
Kpn I/31/(590)
Spe I/279/(838)
Bam HI/310/(869)
Pst I/560/(1119)
Pst I/737/(1296)
polylinker(2088)
Kpn I(2367)
Spe I(2615)
Bst YI(2651)
Eco R1(1)
U3
R/U5
pbs psi gag
R
U5
Foch 29 del U3 HYGRO
(7176 pb)
FOCH BglII
HYG Bam HI
HYGRO
pUC 19
Bst YI(4508)
polylinker :
Bam HI : 2088
Xba I : 2094
Sal I : 2100
Pst I : 2106
Sph I : 2112

FIGURE 22

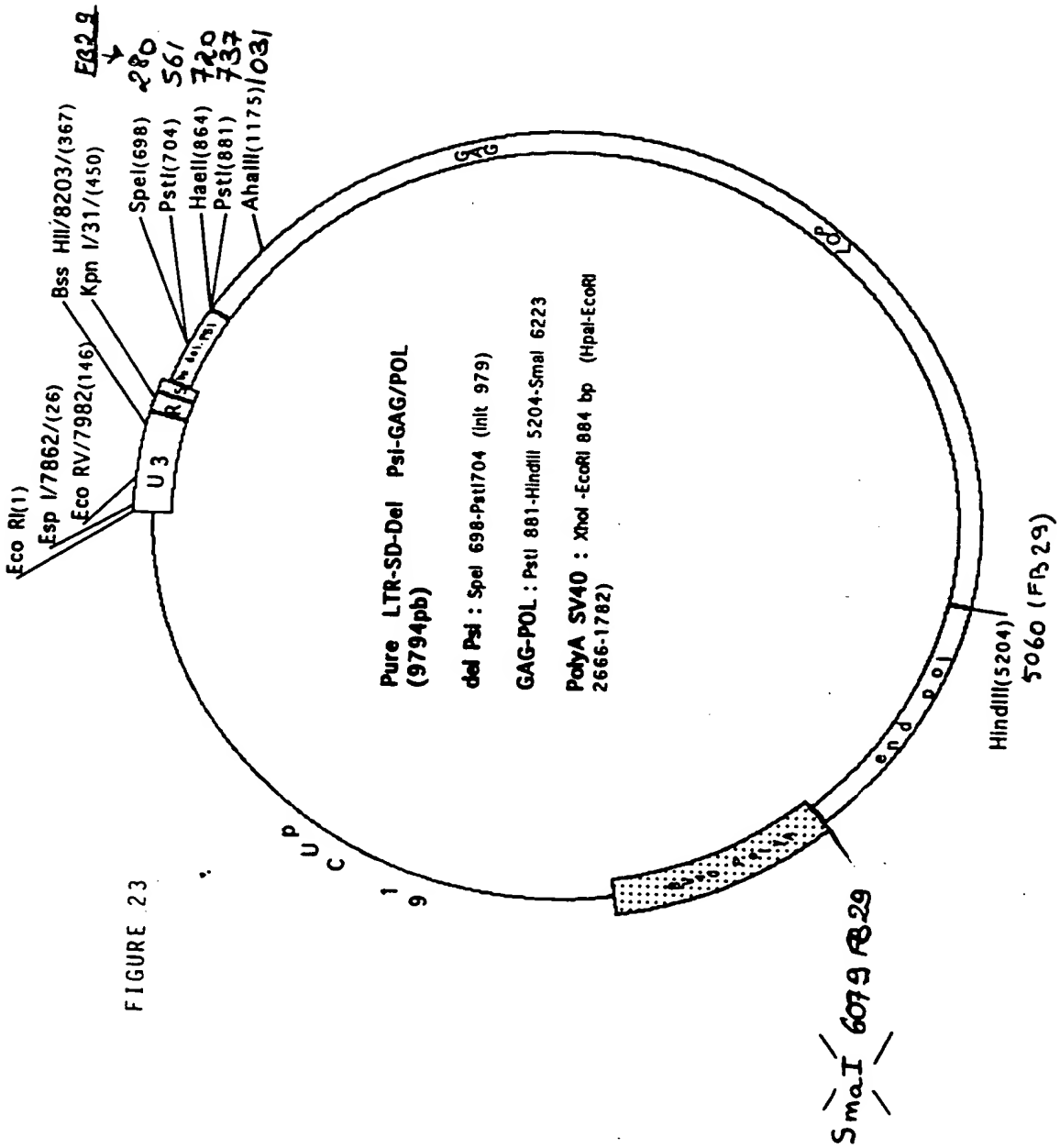

Eco RI(1)
Esp I/7862/(26)
Eco RV/7982(146)
Bss HII/8203/(367)
Kpn I/31/(450)
SpeI(698)
PstI(704)
HaeII(864)
PstI(881)
AhaIII(1175)
E829
280
561
720
737
1031
U3
R
U5
Psi
GAG
POL
Pure LTR-SD-Del Psi-GAG/POL
(9794pb)
del Psi : SpeI 698-PstI704 (init 979)
GAG-POL : PstI 881-HindIII 5204-SmaI 6223
PolyA SV40 : XhoI -EcoRI 884 bp (HpaI-EcoRI
2666-1782)
HindIII(5204)
5060 (FB29)
SmaI 6079 FB29

FIGURE 23

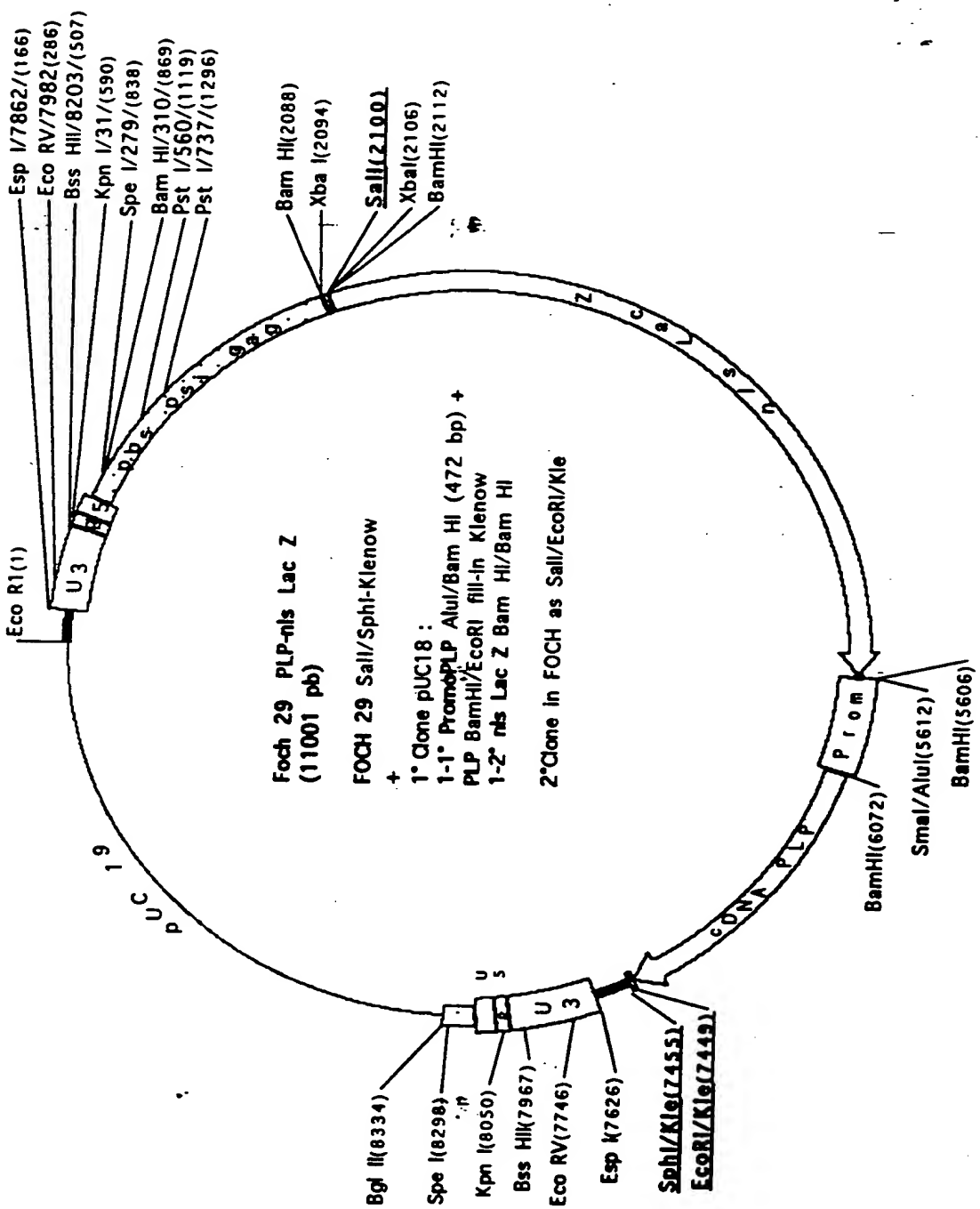


FIGURE 24